BX 6500/6600

Handbook

P/N 361872-01

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Compliance Information

BX 6500/6600 Compliance Information

For Customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Warning

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide responsible protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Shielded cables must be used with this unit to ensure compliance with Class A FCC limits.

The user may find the following booklet prepared by the Federal Communications Commission helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-00-00345-4.

Tests for safety are carried out by the UL International (UK) Ltd. according to harmonized standard IEC 60950.

For Customers in Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This equipment is UL listed.

Pour la clientèle du Canada

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicales aux appareils numerique de las class A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Cet équipement est certifié CSA.

For Customers in the European Union

This equipment displays the CE mark to indicate conformance to the following legislation.

Tests for EMC are carried out by the Environmental and Technical Services Ltd. according to harmonized standards listed below:

Applicable EMC standards:

- BS EN55022 Class A
- BS EN61000-3-2
- BS EN61000-3-3
- BS EN55024

Support and Training

Contact Information

If you have any questions or need assistance, please contact Videojet Technologies Inc. at 1-800-843-3610 (for all customers within the United States). Outside the U.S., customers should contact their Videojet Technologies Inc. distributor or subsidiary for assistance.

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Service Program

About *Tot al* Source Commitment

Total Source® TOTAL SERVICE PLUS RELIABILITY, is the Videojet Technologies Inc. commitment to provide you - our customer - the complete service you deserve.

The *Tot al* Source Commitment

The Videojet *Tot al* Source® Service Program is an integral part of our business in providing marks, codes, and images where, when, and how often customers specify for packages, products, or printed materials. Our commitment includes:

- Applications support.
- Installation services.
- Maintenance training.
- Customer response center.
- Technical support.
- Field service.
- Extended hours phone assistance.
- Parts and supplies.
- Repair service.

Customer Training

If you wish to perform your own service and maintenance on the printer, Videojet Technologies Inc. highly recommends you complete a Customer Training Course on the printer.

Note: *The manuals are intended to be supplements to (and not replacements for)* ***Videojet Technologies Inc.*** *Customer Training.*

For more information on Videojet Technologies Inc. Customer Training Courses, call 1-800-843-3610 (within the United States only). Outside the U.S., customer should contact a Videojet subsidiary office or their local Videojet distributor for further information.

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Glossary

Introduction

1

This chapter contains the following topics:

- The user documents of BX 6500/6600
- Who must use the printer handbook

Warning

You must read Chapter 2, “Safety” before you install, operate, service, or maintain the equipment to prevent the injury.

The BX 6500/6600 Documentation Set

Videojet provides four BX 6500/6600 user documents for reference:

Sl.No	Manual	End User	Description
1.	BX 6500/6600 Handbook	Operator	Describes basic printer operation
2.	Service Manual	Service Technician	Describes how to maintain, examine, and repair the printer
3.	Illustrated Parts List (IPL)	Service Technician	Gives the information on all the parts and accessories of the printer
4.	Installation Instructions	Service Technician	Provides the instructions for the printer installation and setup

Table 1-1: BX 6500/6600 User Documents

Who must use the BX 6500/6600 Handbook

The BX 6500/6600 Handbook describes the basic operation and maintenance procedures that an operator can perform.

Note: *An operator does not have any classroom training on the BX 6500/6600 printer.*

The operators must report any service or maintenance problems that are not described in this handbook to the Videojet service personnel.

Warning

PERSONAL INJURY. The customers who select to service and maintain the printer themselves, must be trained, qualified personnel to perform those procedures described in the Service Manual. The qualified personnel must complete the training courses, have knowledge about this printer, and know the potential hazards.

Content Representation Used in this Handbook

The word "printer" refers to the Videojet BX 6500/6600 printer for easy reference in this manual.

Safety

2

This chapter contains the following topics:

- Introduction
- Statement of Liability
- Safety Conventions Used in this Handbook
- Equipment Safety Guidelines
- Fluid and Ink Safety Guidelines
- Medical Emergencies

Introduction

The policy of Videojet Technologies, Inc. is to manufacture non-contact printing/coding systems and ink supplies that meet high standards of performance and reliability. We enforce strict quality control techniques to eliminate the potential for defects and hazards in our products.

The intended use of this printer is to print information directly onto a product. Use of this equipment in any other fashion may lead to serious personal injury.

The safety guidelines provided in this chapter are intended to educate the operator on all safety issues in order to operate and maintain the printer in a safe manner.

Statement of Liability

Videojet Technologies, Inc. is not liable for any damage or injury arising from failure to follow the instructions and procedures provided within the manuals or the associated informational material, or from user failure to use caution when installing, operating, adjusting, or servicing this equipment. Videojet Technologies is not liable for damage or injury arising from use of this product for any use other than that intended by the manufacturer.

Safety Conventions Used in this Handbook

Specific safety information is listed throughout this manual in the form of WARNING and CAUTION statements. Pay close attention to these statements as they contain important information on avoiding potential hazards to you or to the equipment.

WARNING Statements

- are used to indicate hazards or unsafe practices which COULD result in severe personal injury or death
- appear in bold type
- have a triangular symbol with an exclamation point to the immediate left of the text
- are preceded by the word WARNING
- are always found before the step or piece of information to which they refer
- look like the following example:

Warning

PERSONAL INJURY. Read section “Fluid and Ink Safety Guidelines” on page 2-6 before changing a fluid reservoir. You may get seriously injured if you do not.

CAUTION Statements

- are used to indicate hazards or unsafe practices which COULD result in minor personal injury or product or property damage
- appear in bold type
- have a triangular symbol with an exclamation point to the immediate left of the text
- are always preceded by the word CAUTION
- are always found before the step or piece of information to which they refer
- look like the following example:

Caution

EQUIPMENT DAMAGE. Make sure that you use the proper type of ink and make up fluid. The printer may get damaged if you do not.

Equipment Safety Guidelines

Introduction

This section contains important safety guidelines pertaining to the operation and handling of the printer and associated equipment.

Warning

PERSONAL INJURY. Always observe the following safety guidelines when operating and handling the printer and associated equipment.

No Smoking

Do not smoke when near the printer or printhead. Explosion or fire may result if the printer exhaust fumes are subjected to an ignition source.

Comply with Electrical Codes

All electrical wiring and connections must comply with applicable local codes. Consult the appropriate regulatory agency for further information.

Do Not Remove Warning Labels

Do not, under any circumstances, remove or obstruct any warning, caution, or instruction labels in the printer.

Warning

PERSONAL INJURY. Do not place the printer in an explosive atmosphere.

Placement of the Printer

Do not place the printer in a hazardous location. Hazardous locations, as defined in the United States, are those areas that may contain hazardous materials in sufficient quantity to create an explosion. These are defined in Article 500 of the *National Electrical Code* ANSI/NFPA 70-1993.

Warning

PERSONAL INJURY. Electrically ground the service tray to the printer before servicing the printhead. You may get severely burned if you do not. An ungrounded service tray can generate a static spark. A static spark could start a fire or explosion from the cleaning solution, ink or makeup fluid in the service tray.

Warning

PERSONAL INJURY. Only use metallic service trays when servicing the printhead. Non-metallic trays can generate static sparks. The figure (Figure 2-1) shows a properly grounded service tray.

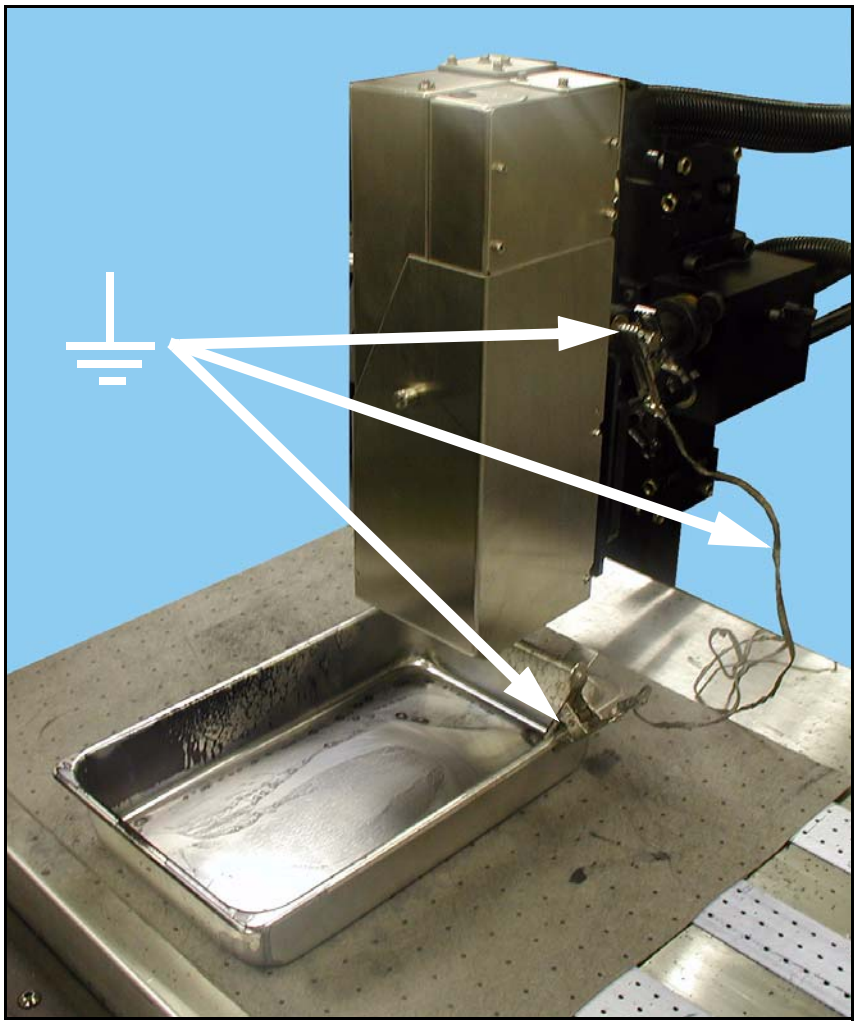


Figure 2-1: Properly Grounded Service Tray

Fluid and Ink Safety Guidelines

Always use appropriate fluids and inks for your printer. The following precautions explain how to safely work with Videojet Technologies, Inc. InkSource inks, makeup solutions, and supplies.

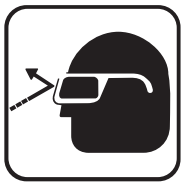
Warning

PERSONAL INJURY. Always observe the following safety guidelines when working with any ink or cleaning solution.

Caution

PERSONAL INJURY. For continued protection against possible hazards or damage to the printer, use only Videojet InkSource inks according to the directions specified on the label.

Wear Safety Glasses



Wear safety glasses with side shields (or equivalent eye protection) when handling any ink, make-up fluid or cleaning solution. If splashed into your eyes, flush eyes with water for 15 minutes and see a physician immediately.

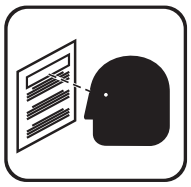
Avoid Skin Contact

Wear butyl rubber gloves when handling any ink, make-up fluid or cleaning solution. Avoid contact with skin and mucous membranes (nasal passage, throat). Upon contact with skin, remove any contaminated clothing and wash area with soap and water. See a physician if irritation persists.

Avoid Breathing in Vapors

Avoid prolonged exposure to vapors. If respiratory protection is needed, a cartridge organic respirator is required.

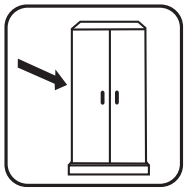
Read the Material Safety Data Sheets (MSDS)



Read and understand the Material Safety Data Sheet (MSDS) before using any ink, make-up fluid, or cleaning solution. An MSDS exists for each type of ink, make-up fluid, and cleaning solution; the appropriate sheets are are available on the Videojet website @ www.videojet.com.

Make certain to retain all MSDSs for future reference in the event you should need to see a physician regarding an ink-related accident. Additional copies of MSDSs are available upon request and can be obtained by contacting the Videojet Customer Service Department at 800–843–3610. Outside the U.S., customers should contact a subsidiary Videojet office or their local Videojet distributor.

Store Inks Properly



Certain inks, make-up fluids, and cleaning solutions are flammable and must be stored appropriately. Storage must comply with local regulations; contact the appropriate regulatory agency for further information. The label on the bottle or the Material Safety Data Sheet (MSDS) will indicate if a particular fluid is flammable.

Dispose of Ink Properly

Do not pour any ink, make-up fluid, or cleaning solution into sinks, sewers, or drains. Waste disposal must comply with local regulations; contact the appropriate regulatory agency for further information.

Medical Emergencies

Warning

PERSONAL INJURY. In the event of a medical emergency, contact a physician immediately.

Emergencies Involving Printer Fluids

If the incident involves an ink, make-up fluid, or cleaning solution, bring the bottle and/or Material Safety Data Sheet (MSDS) with you to the physician's office. These items contain important information that the physician may require in order to provide treatment.

Rocky Mountain Poison Control Center

All of Videojet inks, make-up fluids, and cleaning solutions are registered with the Rocky Mountain Poison Control Center, located in the United States. If the bottle or MSDS cannot be located, the physician can contact the Rocky Mountain Poison Control Center to obtain the information required.

Rocky Mountain Poison Control Center
(303) 623-5716

Note: *Persons outside the United States requiring medical attention can have a physician contact the Rocky Mountain Poison Control Center in the United States or a poison control center or hospital in their own area.*

Technical Description

3

This chapter describes the main parts of the BX 6500/6600 printer

About the Printer

The Videojet BX 6500/6600 is a non-contact binary array ink jet printer that is used production printing at high-speed. The BX 6500/6600 prints graphics (bitmaps), bar codes, and text images. The printer can print the images on any surface or textures.

The BX 6500/6600 system has a print engine, an IO, a Graphic User Interface (GUI) and printheads (one or two).

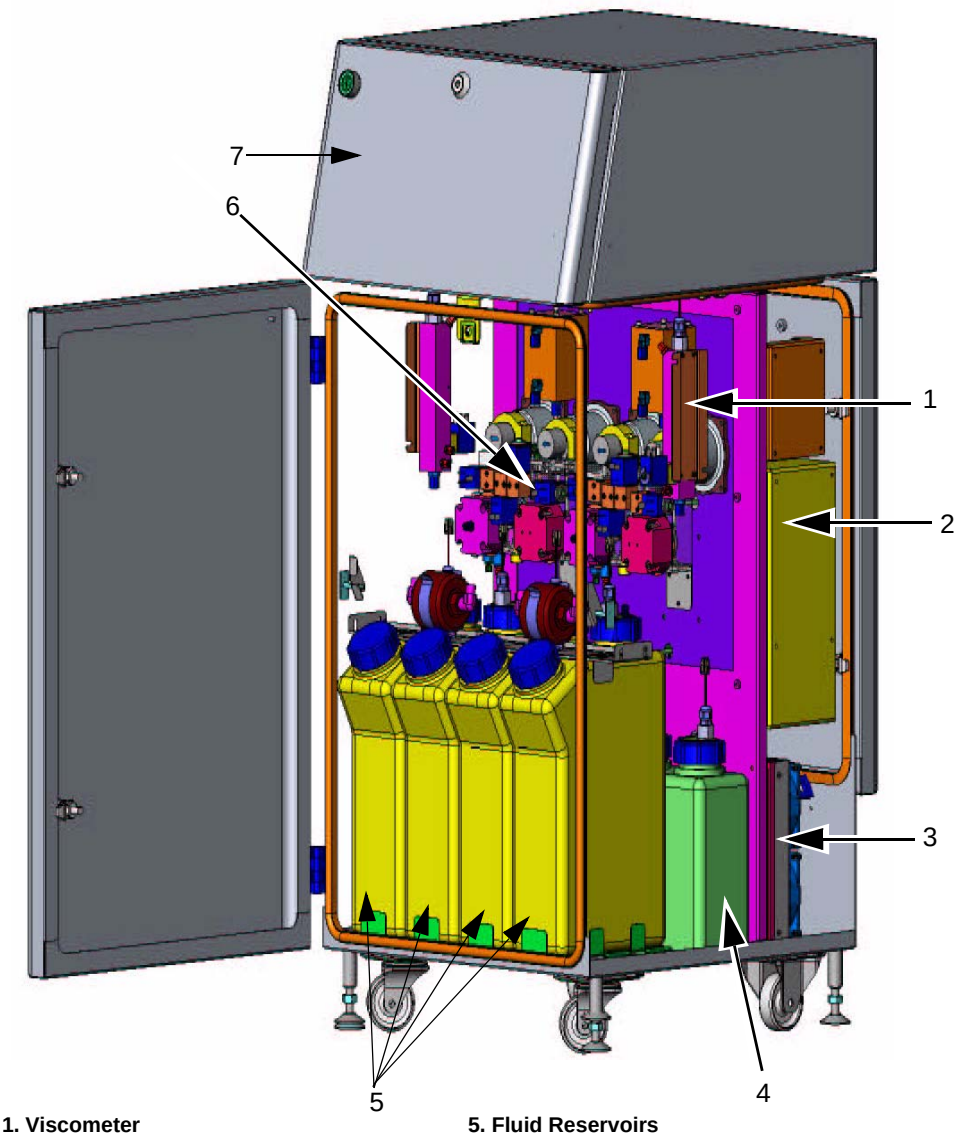
The BX 6500/6600 can print either a fixed or a variable message from each printhead. A separate system of control (which is not included in the manual) defines and generates the image that must be printed. The image is sent to the printer through the connecting cables. The image gets printed on the products that pass below the printhead on an external conveyor system or a continuous web.

Some important features of the BX 6500/6600 include:

- Flexible printhead configuration
- Font conversion
- All standard bar codes
- Graphic printing
- Small footprint
- 128 DPI
- Overlaying of print colors from separate printheads
- Electronic stitching
- Inspector diagnostic software (optional)
- Simple I/O (optional)
- Validation
- PDF proofing

Print Engine

The print engine is found in the printer cabinet. The print engine includes the items shown in the Figure 3-1.

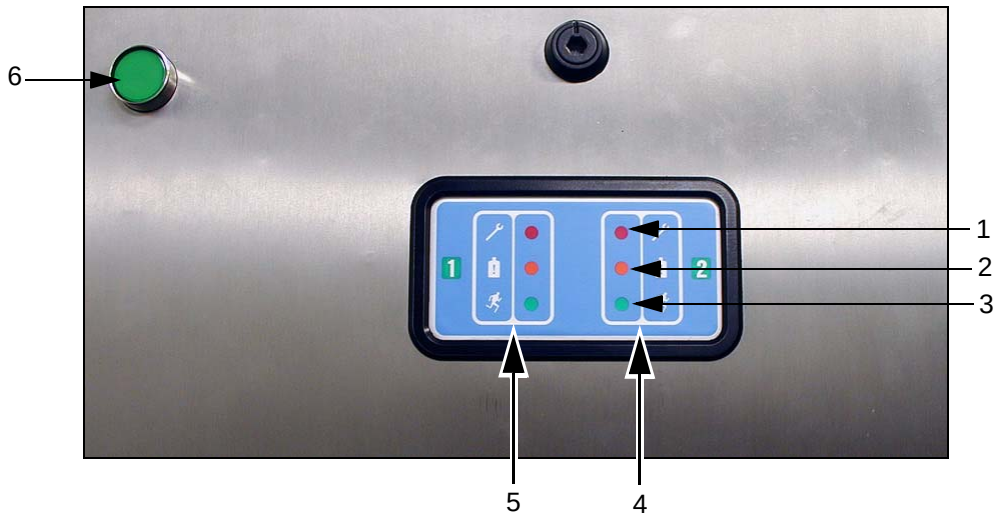


1. Viscometer
2. Power Supplies and Heaters
3. Coolers
4. Mixer Tank
5. Fluid Reservoirs
6. Pumps, Filters & Valves
7. Ink Manager PCB and Print Manager PCB

Figure 3-1: Print Engine

Operator Indicator Panel

The operator indicator panel is on the front of the printer cabinet. The panel shows the status of the printer.



1. Printing Stopped LED
2. Fluid/Ink Level Low LED
3. Print OK LED
4. Printhead 2
5. Printhead 1
6. On/Off Button

Figure 3-2: Operator Indicator Panel

ON/OFF Button

The ON/OFF switch turns the printer on and off. When the button is pressed, the button illuminates a green light.

Indicator lights of Printhead 1 and Printhead 2

The following lights indicate the status of the printer.

Printing Stopped (Red Light)

During the normal operation, this light is turned off. When the printer stops the printing because of an ink system malfunction, the red light illuminates.

Fluid Level Low (Amber Light)

During the normal condition, this light is turned off. When the reservoir fluid is low, this light flashes slowly for 8 minutes. If the reservoir is not filled within 8 minutes, this light flashes quickly until the reservoir is filled. If the reservoir is not filled within approximately 30 minutes, the ink viscosity goes off the tolerance and the ink system is shutdown.

Printer OK (Green Light)

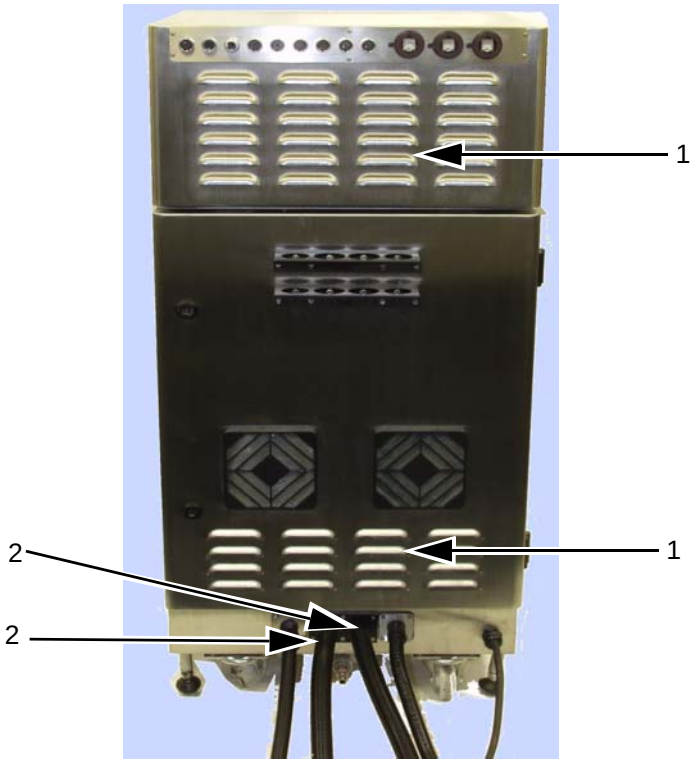
During the warm-up sequence, this light flashes slowly. During a jet cycle, this light flashes quickly. When the ink has reached the correct operating temperature and viscosity, this light illuminates continuously. If a fault condition occurs, this light turns off.

Rear Panel

All connections for electrical power, communications and signals of control are made at the back side of the printer. The rear panel also contains the ventilation and cooling ports (Figure 3-3).

Caution

EQUIPMENT DAMAGE. Do not keep any obstruction to the ventilation or cooling ports. Make sure that the printer is set away from the walls and equipment to allow free air flow.



1. Ventilation Ducts
2. Printhead Umbilicals

Figure 3-3: Rear Panel

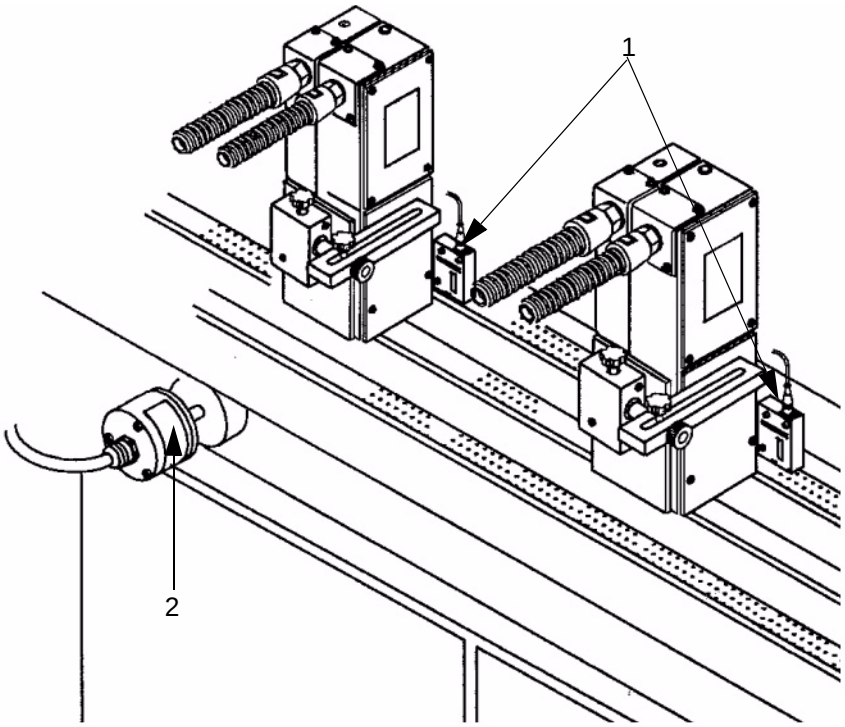
Product Detector

A product detector detects the presence of an object to print. You can connect one product detector for each printhead, or one product detector for both printheads. You must install the product detector normally near the printhead.

Shaft Encoder

The shaft encoder measures the speed of the transport system. The measurement of speed makes sure that the size and position of the printed image remains same during the production. A single shaft encoder is used. Refer to Figure 3-4.

***Note**: The rotation of the encoder wheel generates the electronic pulses. The pulses are input to the printer to calculate the speed of the transport system.*



1. Product Detectors
2. Shaft Encoder

Figure 3-4: Product Detectors and Shaft Encoder

Crescendo Controller

The Crescendo Controller provides the Graphic User Interface (GUI) and the signal router for the BX6500/6600 printer. The controller has a PC and an IO box. The PC creates the image that you must print and the product detect and shaft encoder signals are sent through the IO board. The print data is carried to the print engine over an Ethernet cable straight from the GUI. The signal from the shaft encoder and the product detector come through the IO box to the print engine. All cables enter the print engine through the connector panel found behind the print engine.

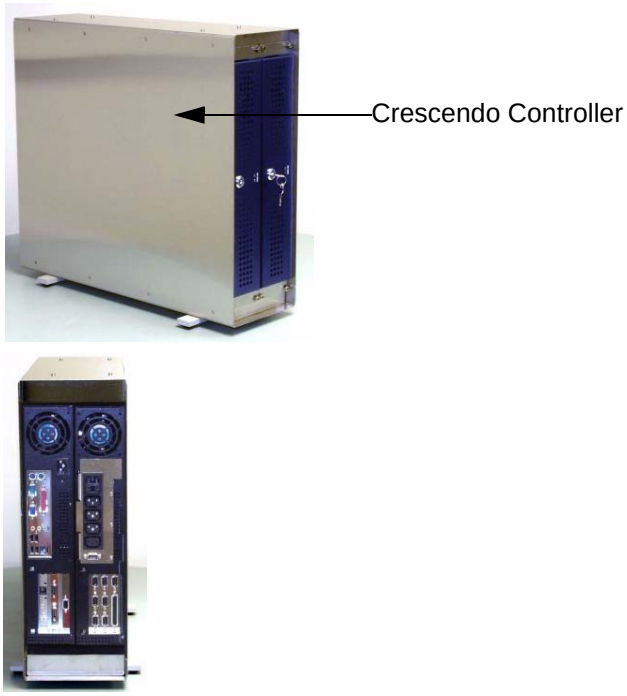


Figure 3-5: Crescendo Controller

Printhead

The BX6500/6600 can have one or two printheads per print engine (Figure 3-6). The model number BX6500 has one printhead and BX 6600 has two printheads.

The nozzle in each printhead has 256 ink jets for a 2 inch (50.8 mm) array. Each ink jet creates an ink stream that contains minute drops of ink.

The charged drops of ink that are not required for the image, are deflected into the gutter. The ink drops are returned to the ink system in the cabinet. The other drops of ink that are not charged pass by the gutter and print the dots (known as pixels) to create a printed image.

The printheads print at a resolution of 128 dpi along the vertical array and normally 50 to 300 dpi (operator set) along the horizontal array.

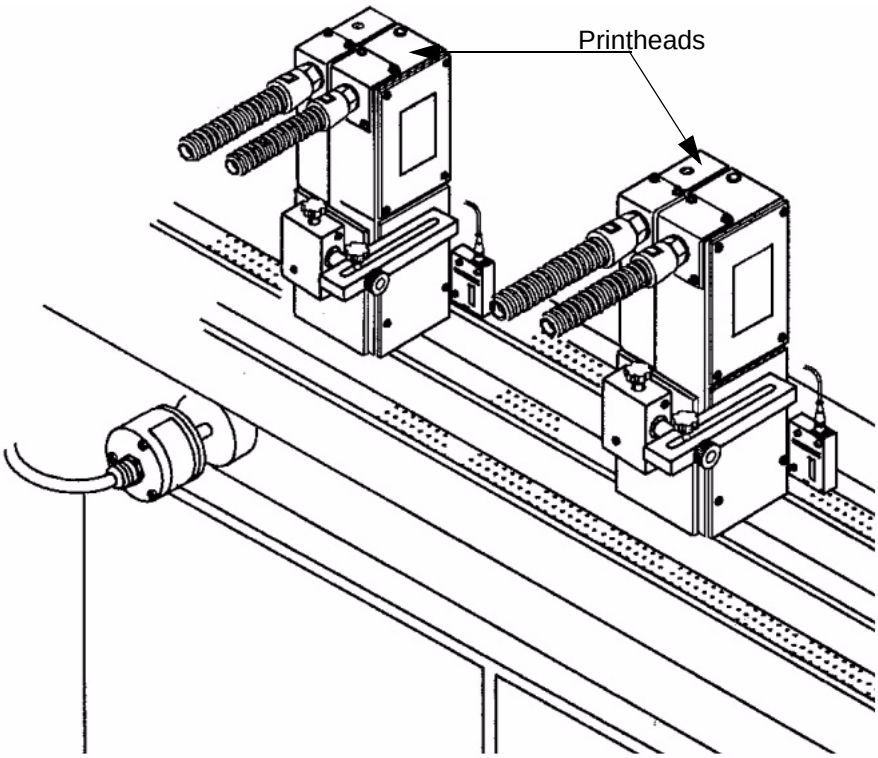


Figure 3-6: Printheads

Fluids

Videojet printers are designed to run with Videojet inks. Videojet inks are created, made and guaranteed by Videojet. These inks improve the performance of your Videojet digital imaging system as well as increase your production efficiency. Videojet printers and fluids are designed, tested and made together to function at optimum performance levels.

Caution

EQUIPMENT DAMAGE. Only Videojet fluids are recommended for use in this printer. The fluids which are not approved can damage the unit, give low-quality printing output, or void the regulatory approvals.

Maintenance

4

This chapter contains the following topics:

- The printer startup maintenance
- The procedure to clean the printhead
- The procedure to clean the ventilation filters
- The procedures to clear the skews

Printer Startup Maintenance

Before you turn on the printer at the start of the day, check and refill the make-up fluid and ink reservoirs. Do the checks every day.

When the fluid in the reservoirs of ink or make-up fluid drops to a low level, the low fluid reservoir indicator flashes. Fill the reservoir with the fluid else, the low level indicator flashes for approximately 30 minutes before the ink system is shutdown.

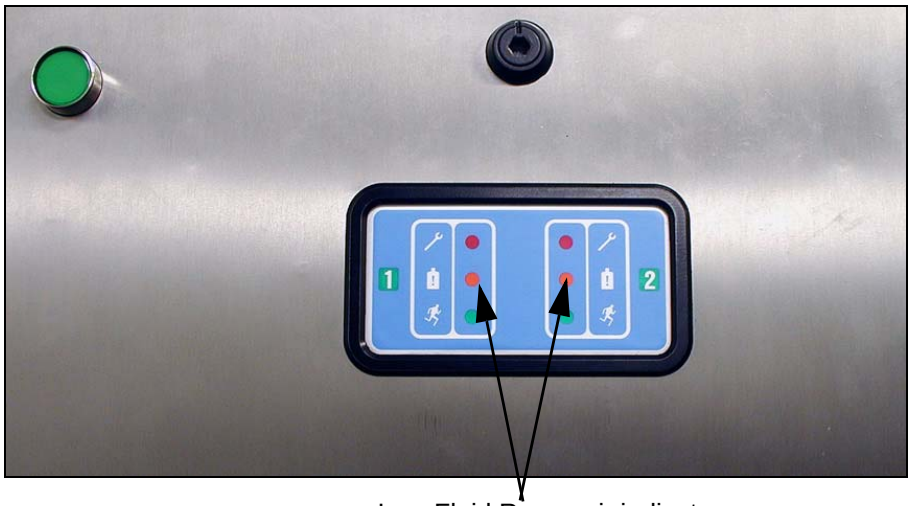


Figure 4-1: Ink Low Indicators

Warning

You must read Chapter 2, “Safety” before you fill a fluid reservoir again. You can get seriously injured if you do not follow this warning. The ink and make-up fluid are extremely flammable.

Caution

Make sure that you use the correct type of ink and make up fluid.

Do not add make-up fluid to the ink reservoir or ink to the make-up fluid reservoir. The failure to follow this caution damages the printer.

Tools

- Cleaning Wipes
- Drip Pad
- Large Flat-blade Screwdriver
- Ground Strap

How to Check and Fill the Fluid

Do the following tasks to check and fill the ink and make-up reservoirs:

1. Use a large flat-blade screwdriver to turn both the front door locks, one and a half-turn to the left side (refer to Figure 4-2 on page 4-3).
2. Open the front door.
3. Put a drip pad on the floor before the printer.

Figure 4-2: Front Door

4 Check the ink and make-up fluid levels in the reservoirs. If enough fluid is found, close the front door.

5 If the ink or make-up fluid is low, loosen the black ring on cap assembly of reservoir that must be filled. Remove the cap assembly (Figure 4-3).

Figure 4-3: Reservoirs

6 Loosen the spill proof cap on the cap assembly and remove the spill proof cap. Keep the cap in a safe location.

Note: *The color (black or white) of the cap depends on the type of fluid (ink or make-up).*

7 Loosen the cap on ink or make-up fluid bottle and remove the cap. Keep the cap in a safe location.

8 Fasten the cap of the reservoir on the new ink or make-up fluid bottle. Make sure that vent (large hole) in the cap is in the direction of the handle of the bottle (Figure 4-4 on page 4-5). This action makes sure that the fluid does not spill when you fill the reservoir.

Figure 4-4: Vent

9 Fill the reservoir that contains low fluid until the reservoir is full. Do not fill more. (Figure 4-5 on page 4-6).

10 When you fill the reservoir, fit the cap assembly on the reservoir. Close the printer door.

Figure 4-5: Filling Reservoir

Eight Hour Maintenance

If the printer is in the operation continuously for eight hours with the Jets turned on, you must perform the eight hour maintenance.

Warning

Make sure that the electrical ground of the printhead service tray is correct before you do maintenance to the printer. The failure to follow this warning can cause the severe burns.

A service tray or printhead that are not connected to an electrical ground correctly can generate a static spark. The static sparks can start a fire or explosion from the ink and cleaning fluids.

When you service the printer, only use Videojet service trays that are made of metal. The service trays that are not made of metal cannot provide the electrical ground. The Figure 4-6 on page 4-7 shows a service tray to printhead correctly connected to an electrical ground.

Caution

When you clean the printhead, do not touch any part of the printhead with the wash bottle. Do not touch the areas shown in white in Figure 4-9 on page 4-11 because the parts are very fragile and costly.

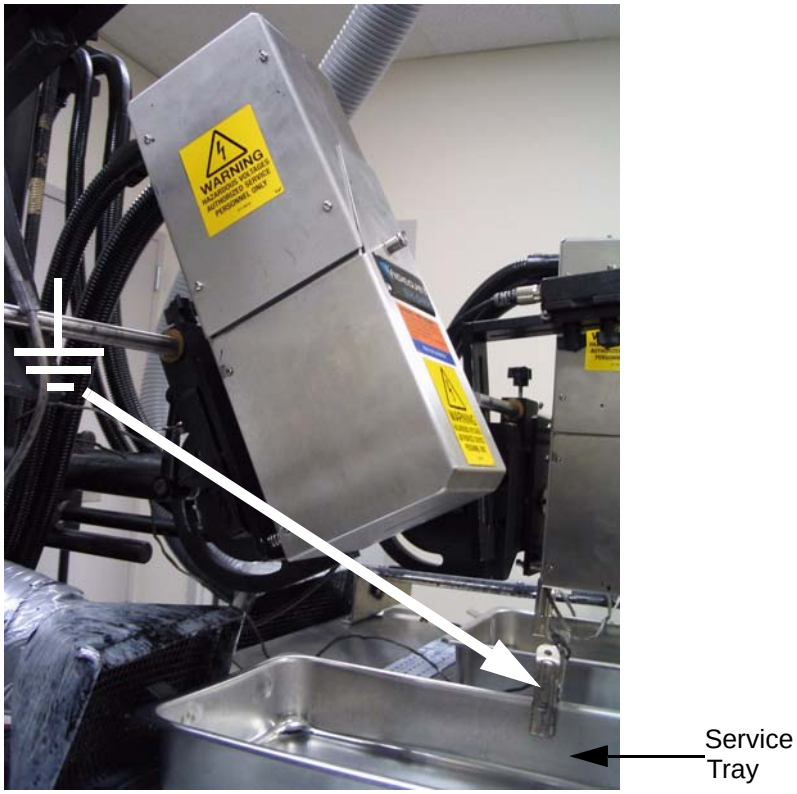


Figure 4-6: Printhead in Service Position

Tools

- Clean and compressed air source
- Service tray with ground strap
- The flush solution in a cleaning bottle (Table 4-1).

Type of Ink	Proper Flush/Wash Solution
16-41 SR (Acetone-Ethanol) Red	16-46 SR 44 Flush/Wash
16-42 SR (Acetone-Ethanol) Black	16-46 SR 44 Flush/Wash
16-43 SR (Acetone-Ethanol) Green	16-46 SR Flush/Wash

Table 4-1: Flush/Wash Solutions

Type of Ink	Proper Flush/Wash Solution
16-44 SR (Acetone-Ethanol) Blue	16-46 SR Flush/Wash
16-50 SR (Acetone)	16-55 SR Flush/Wash
16-72 SR (MEK)	16-79 SR Flush/Wash
16-73 SR (MEK)	16-89 SR Flush/Wash
16-80 SR (MEK)	16-89 SR Flush/Wash
16-81 SR (MEK)	3601 Flush/Wash

Table 4-1: Flush/Wash Solutions (Continued)

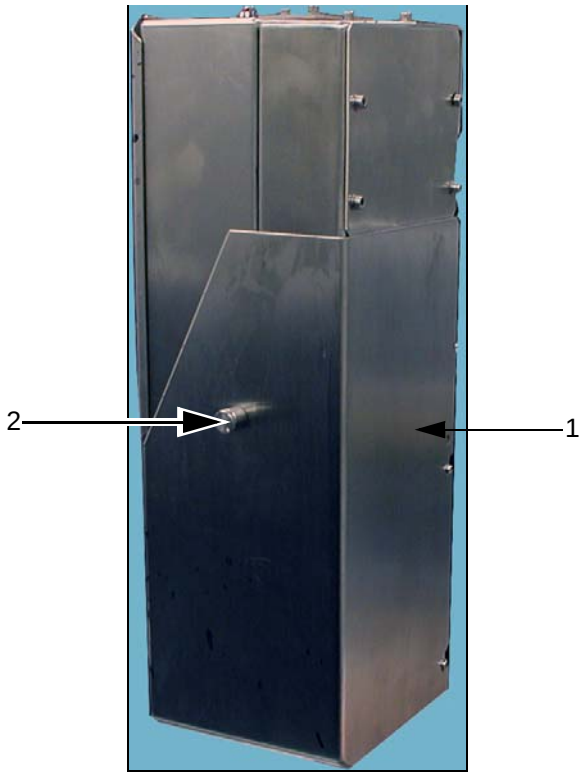
How to Clean the Printhead

Do the following tasks to clean the printhead:

Note: *Make sure that printer is turned on.*

1. Make sure that the printer is not in the print mode.
2. Put the printhead in the service position. Refer to Figure 4-6 on page 4-7.

3 Loosen the cover screw (Item 2, Figure 4-7) and remove the cover (Item 1).

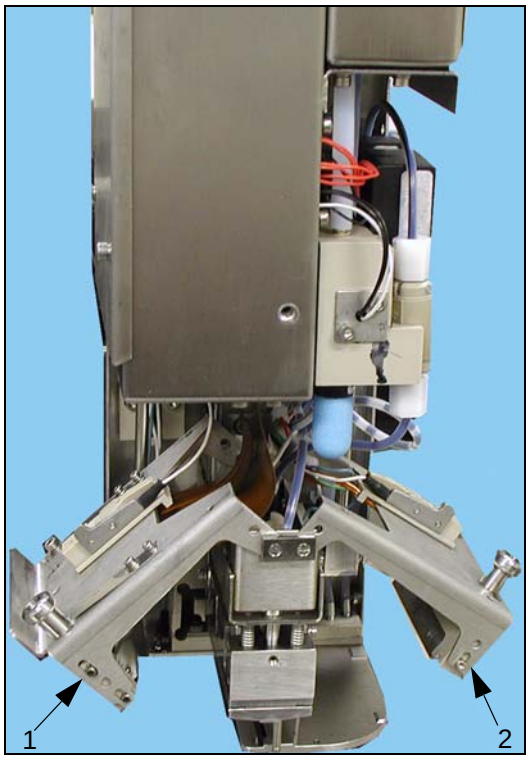


1. Cover
2. Screw

Figure 4-7: Cover Screw

Note: *The swing arms must be open during the eight-hour maintenance.*

4 Unlock the lock bars and rotate the swing arms in the upward direction. Refer to Figure 4-8.



1. Live Arm
2. Ground Arm

Figure 4-8: Rotate Swing Arms

5 Use the wash bottle to clean the following parts of the printhead (Refer to the areas shown in white color, Figure 4-9 on page 4-11):

a. The nozzle (face and posts)

b. The ground swing arm

c. The live swing arm

d. The gutter plate

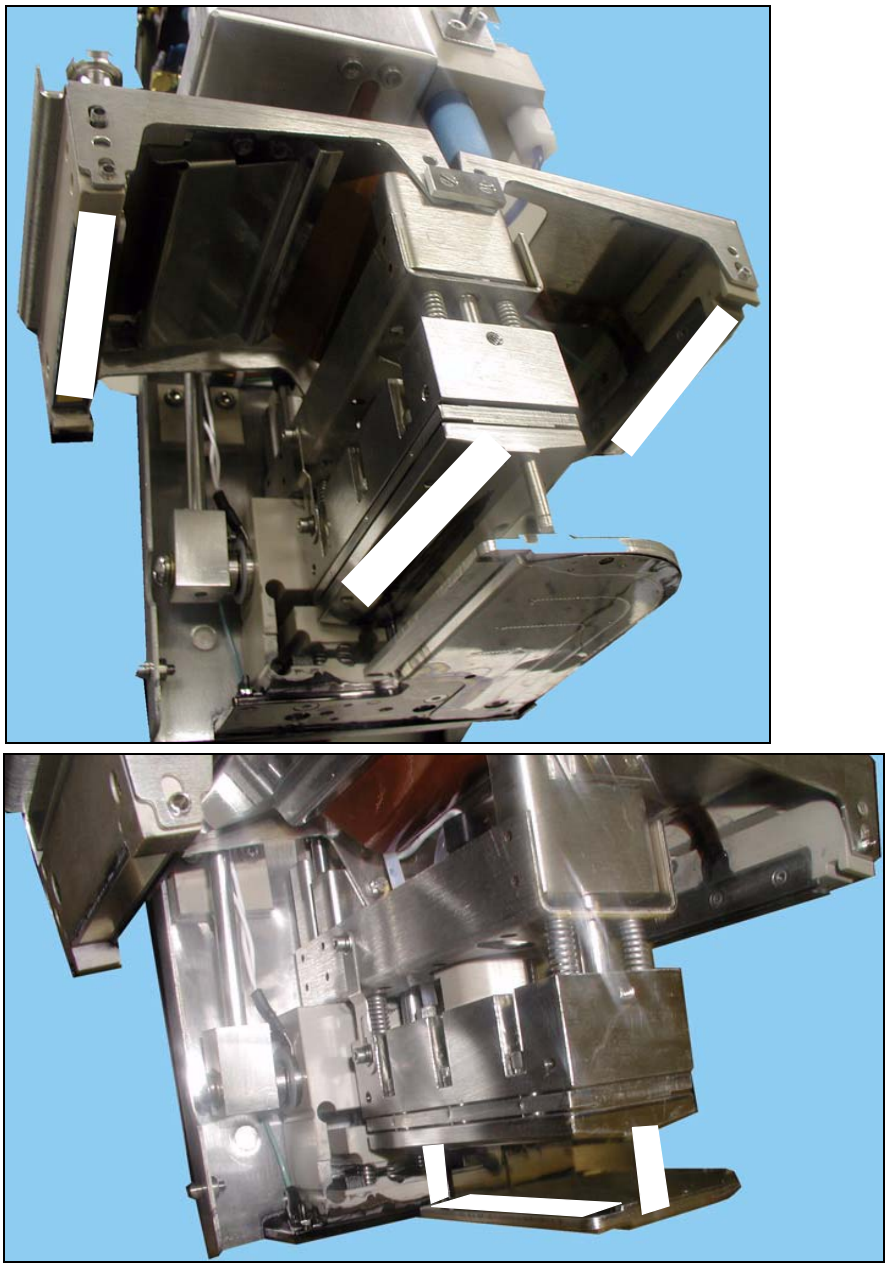


Figure 4-9: Clean Areas (Shown Shaded in White)

Note: *Make sure that you do not touch any part of the printhead when you clean.*

6 Dry the live and ground swing arms with the compressed air.

7 Lower the live swing arm and lock the arm in position.

8 Inspect the live swing arm. If the arm is not clean, repeat from step 5.

9 Lower the ground swing arm and lock the swing arm in position.

10 Attach the lower cover again.

11 Before you phase the printhead, the ink temperature and pressure readings must match the required values. The values or parameters must be monitored in two methods:

- Monitor the Operations and Diagnostic screen on the Crescendo GUI
- Monitor the green light on the Control Panel

If the correct parameters are met, the green light remains continuously illuminated.

12 Phase the printhead. Refer to “Phasing the Printer” on page 5-8.

13 Set the printhead in the print position.

Clean the Ventilation Filters

There are four ventilation filters used in the printer:

- Top rear
- Bottom rear
- Right side bottom
- Left side bottom.

Top Rear Filter

Warning

An operator cannot service the top rear filter. A Videojet trained personnel only must service the top rear filter.

Warning

Turn off electrical power to the printer at the power source before you do maintenance to the printer.

Make sure that the power source is locked out and displays a tag “Printer Being Serviced” before you do maintenance to the printer. The failure to follow this warning can cause serious shocks or burns.

Tools

- A clean, compressed air source with the nozzle
- Large flat-tip screwdriver
- Set of metric Hex wrenches

Procedure

Do the following tasks to clean the top rear ventilation filter:

1 Open the access panel of the top rear ventilation filter with the filter fixed in the retaining bracket (refer to Figure 4-10 and Figure 4-11).

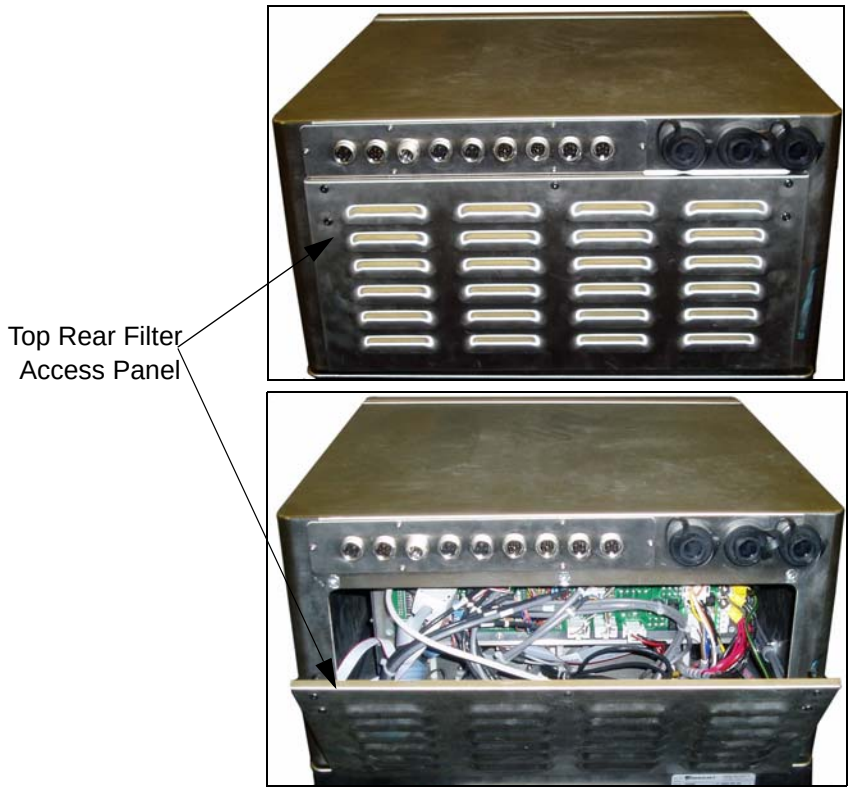
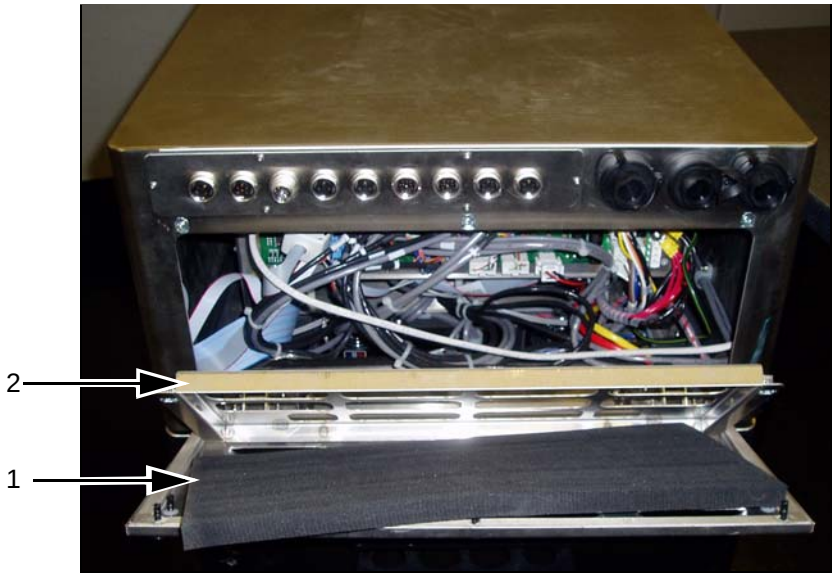


Figure 4-10: Top Rear Filter Access Panel

2 Remove the filter (Item 1, Figure 4-11) from the retaining bracket (Item 2).



1. Filter
2. Retaining Bracket

Figure 4-11: Filter

3 Clean the filter with the compressed air.

4 Insert the filter back into the retaining bracket.

5 Close the access panel of the top rear ventilation air filter.

Note: *The top access cover of the print engine need not be opened to get access to the access panel of the air filter.*

Bottom Rear Filter

Tools

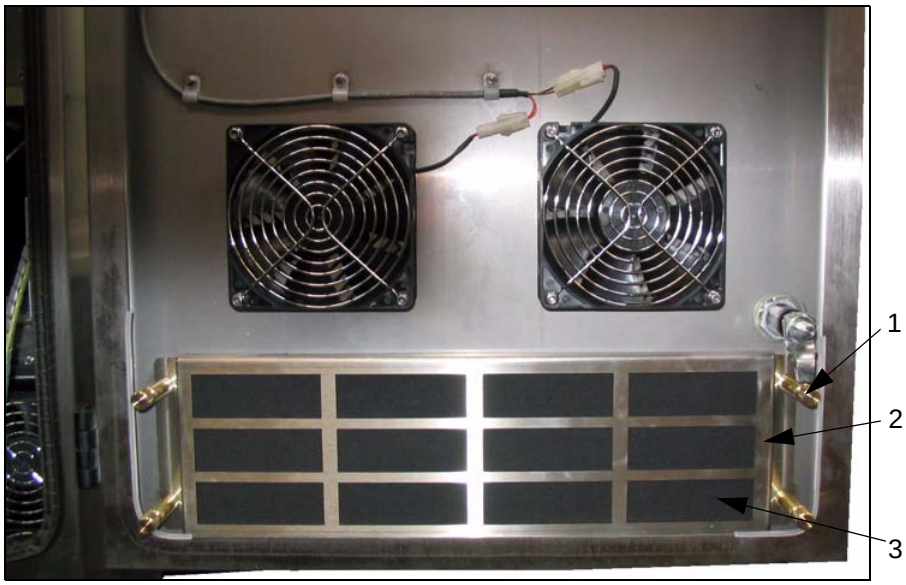
- Clean and compressed air source with the nozzle
- Set of metric Hex wrenches

Procedure

1 Turn the two outer back door locks, half a turn to the left side, and open the outer back door.

2 Remove the filter frame screws (x4). Refer to the item 1, Figure 4-12.

3 Remove the frame (Item 2) and the foam filter (Item 3).



1. Screws (x4)
2. Frame
3. Foam Filter

Figure 4-12: Bottom Rear Ventilation Filter

4 Blow the filter with the compressed air.

5 Use the filter frame screws to attach the frame and the foam filter.

6 Close and lock the outer back door.

Bottom Filter (Right and Left)

Tools

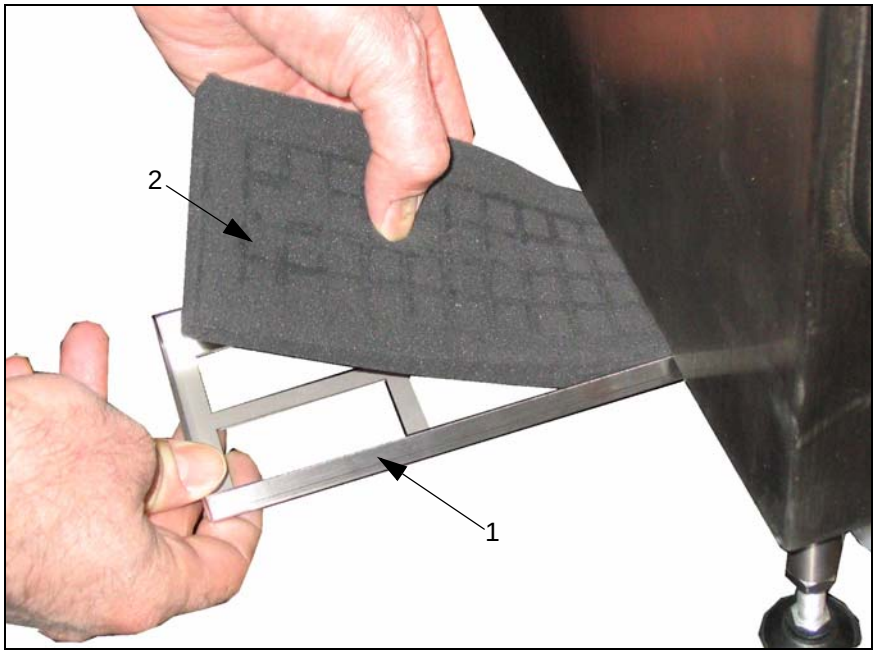
- Clean and compressed air source with the nozzle
- Set of metric Hex wrenches

Procedure

Do the following tasks to clean the bottom (right and left) ventilation filters:

1 Slide the filter frame (Item 1, Figure 4-13 on page 4-16) from the bottom right of the printer and remove the filter (Item 2).

2 Repeat step 1 for the bottom ventilation filter on the left side of printer.



1. Filter Frame
2. Filter

Figure 4-13: Bottom Ventilation Filter

3 Turn the two outer back door locks, half a turn to the left side and open the outer back door.

4 Blow cooler fins with the compressed air.

Note: *A single head cabinet is shown in Figure 4-14. A dual head cabinet contains fins on the left side also.*

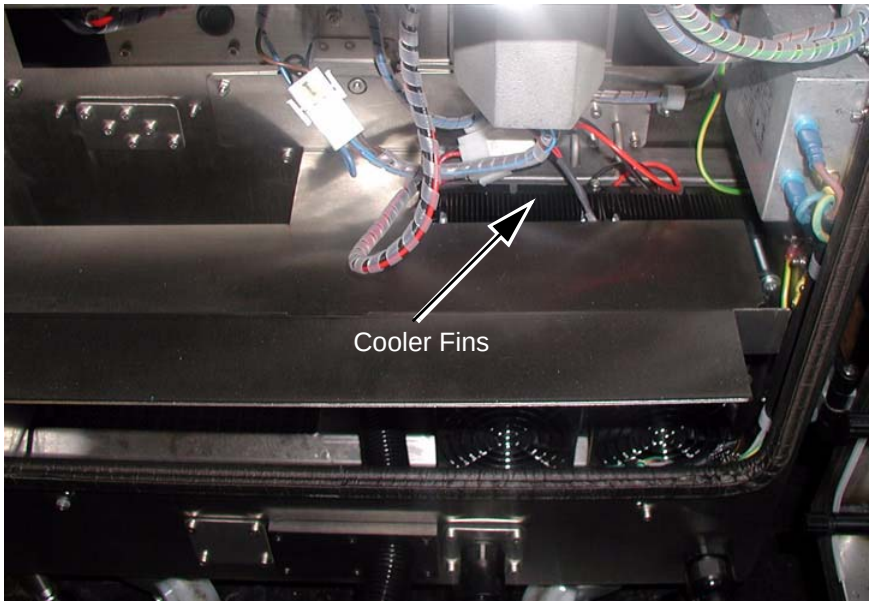


Figure 4-14: Cooler Fin Area

5 Blow the foam filters with the compressed air.

6 Close and lock the outer back door.

7 Put the bottom ventilation filters (two) in the filter frames on either sides of the printer.

8 Slide both the filter frames under the bottom of the printer.

Clear the Skews

The section below gives the following procedures to clear the skews:

- Bleed - The air bubbles in the nozzle are removed through the bleed circuit.
- Backflush - The internal blockage and minor dirt are pushed back into the manifold, and carried away to the cabinet through the backflush circuit.

How to Bleed

To perform the bleed procedure, do the following tasks:

1 Make sure that the printhead is not in the print mode.

2 Loosen the printhead cover screw and remove the printhead cover.

3 Rotate the swing arm lock bars in the upward direction.

4 Rotate the swing arms in the upward direction in the order given below. Refer to Figure 4-8 on page 4-10.

a. Rotate the ground arm upward.

b. Rotate live arm upward.

5 Turn the charge electrode guard in the downward direction to protect the charge electrode.

6 Click the *Bleed* icon (see Figure 4-15). The green LED on the front panel flashes. The flashing LED indicate that the printer is in a head cycle.

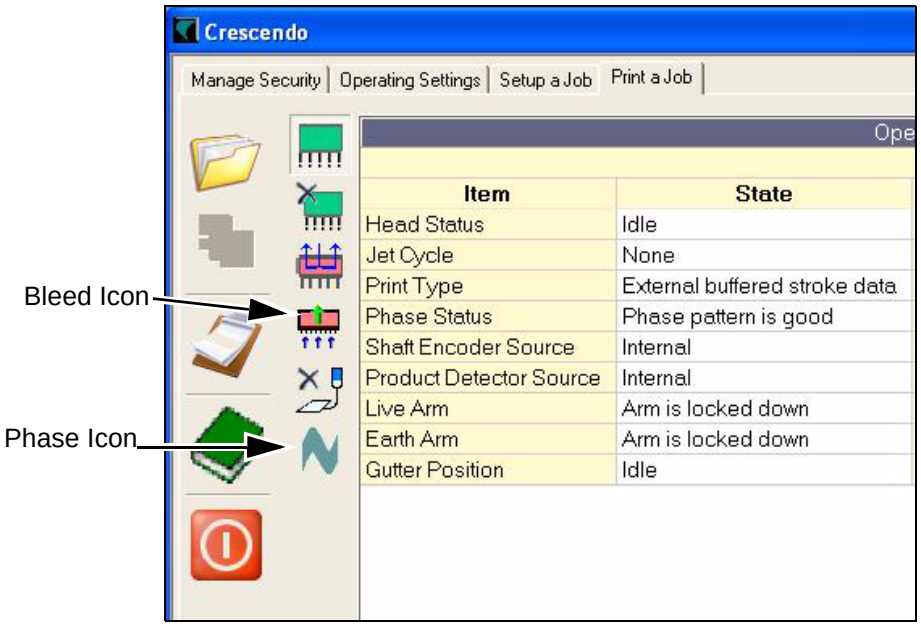


Figure 4-15: Bleed and Phase Icon

7 When the green LED illuminates continuously, the printer indicates that the head cycle is over and all the parameters are met. Now inspect for the skews.

Continue to the next step if there are no skews.

8 Lower the live swing arm completely and lock the swing arm in position. Inspect to make sure that the live swing arm is clean.

9 Lower the ground swing arm completely and lock the swing arm in position.

10 Click the *Phase* icon (see Figure 4-15). The phasing of the printhead starts.

- If there are no skews or blockages in the nozzle the printhead passes the phasing procedure. Attach the lower cover to the printhead and continue the normal operation of the printer.
- If there are skews or blockages in the nozzle, the printhead fails the phasing procedure. Perform the backflush procedure (refer to "How to Backflush" on page 4-19).

How to Backflush

Warning

Before you do the maintenance tasks, always connect the printhead service tray to the electrical ground. A service tray or the printhead that are not connected to the electrical ground can generate the static sparks. A static spark can start a fire or explosion from the ink and cleaning fluids. The failure to follow this warning can cause personal injury (severe burns).

Warning

Only use the service trays that are made of metal and recommended by Videojet. The service trays made of other material do not provide the required electrical ground. The failure to follow this warning can cause personal injury (severe burns).

Tools

- Compressed air source with the nozzle
- Magnifier
- Service tray with ground strap
- Flashlight
- Flush - Cleaning bottle

Procedure

Note: *The backflush procedure automatically bleeds the head for three cycles after the 30 second backflush is completed because air bubbles are generated after the backflush.*

Note: *Make sure that the printer is not in the print mode and the jets are turned on.*

1 Loosen the printhead cover screw and remove the printhead cover.

2 Put the service tray under the printhead and attach the ground strap as shown in Figure 4-16.

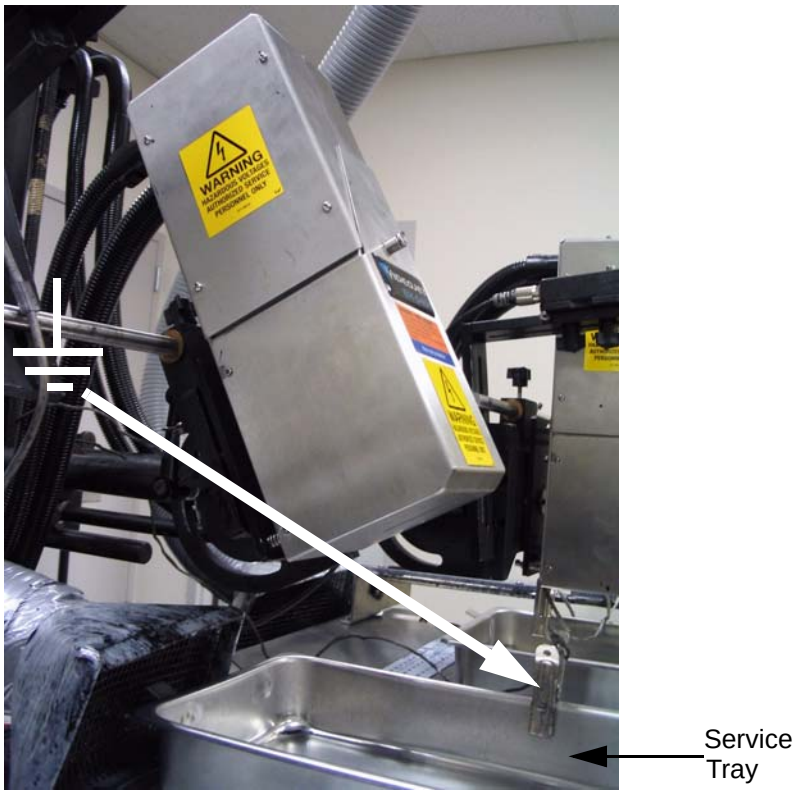


Figure 4-16: Printhead in Service Position

3 Rotate the swing arms in the upward direction. Refer to Figure 4-8 on page 4-10.

a. Rotate the ground arm upward.

b. Rotate live arm upward.

4 Turn the charge electrode guard in the downward direction to protect the charge electrode.

5 Click the backflush icon (see Figure 4-17). The jets stop immediately and the vacuum is generated at the nozzle.

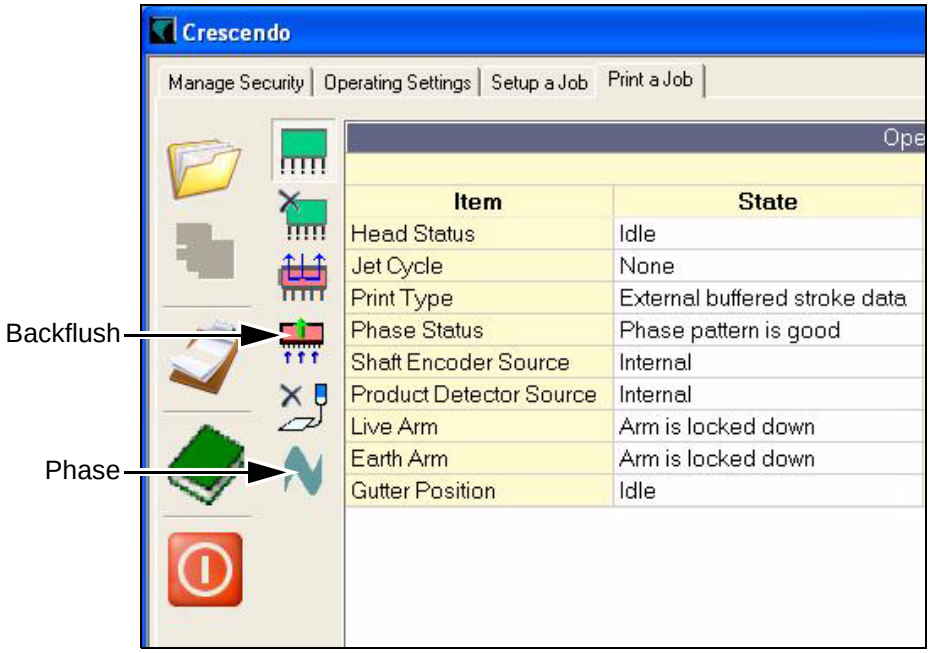


Figure 4-17: Backflush and Phase Icon

Press the backflush icon and the flow of ink out of the nozzle stops because V1 closes and a vacuum is applied because V3 and V10 is open. This condition is maintained for 30 seconds. During this 30 second period, you must spray the flush near the area where the skew occurred (refer to white color line, Figure 4-18 on page 4-22). After 30 seconds, the printer opens V1 and closes V3 and V10. The printer performs three bleed operations automatically.

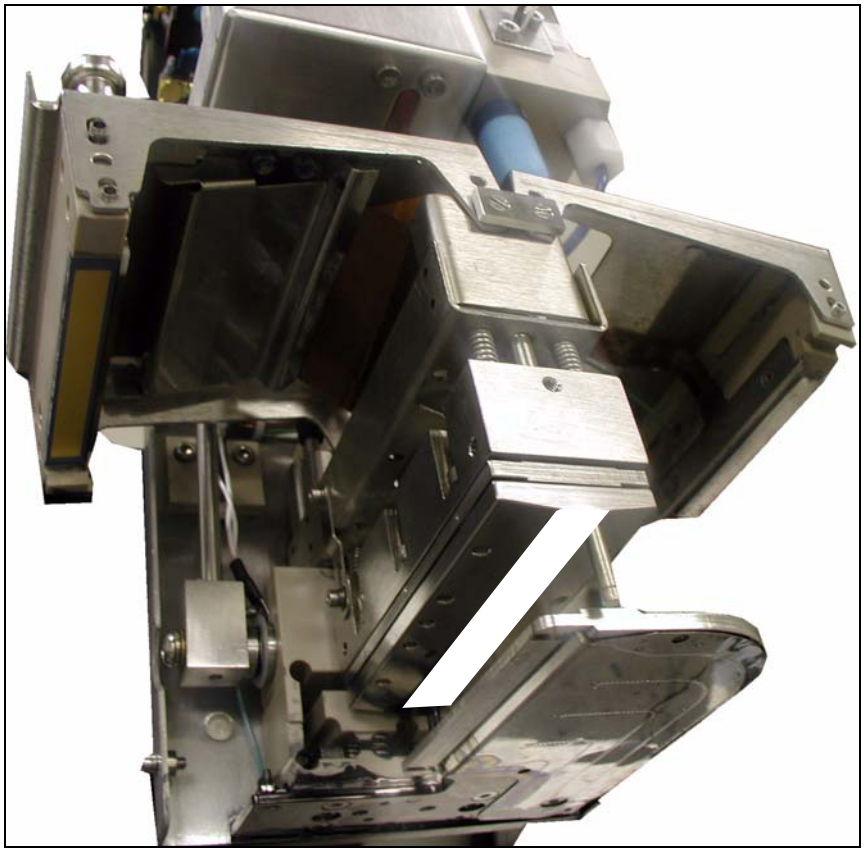


Figure 4-18: Clean Area

6 Use a flashlight and a magnifier to inspect the jet array. If the array is equal for all the jets, go to the next step. Else, repeat steps 1-6.

7 Clean the printhead. Refer to "How to Clean the Printhead" on page 4-8.

8 Turn the charge electrode guard in the upward direction.

9 Lower the live swing arm completely and lock the swing arm in position.

10 Lower ground swing arm completely and lock the swing arm in position. Inspect the live swing arm to make sure that the arm is clean.

11 Wait until all the printhead parameters reach correct levels.

12 Click the *Phase* icon (Figure 4-17 on page 4-21). The printhead phasing procedure starts.

- If the printhead passes the phasing procedure, attach lower cover and continue the normal operation.
- If the printhead fails the phasing procedure, contact a trained service technician.

Operator Functions

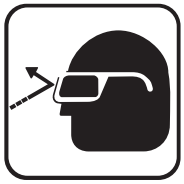
5

This chapter contains the following topics:

- Startup procedure
- Phasing procedure
- Shutdown procedure
- The procedure to print a job

Startup Procedure

Wear Safety Glasses



Wear safety glasses with side shields (or equivalent eye protection) when handling any ink, make-up fluid or cleaning solution. If splashed into your eyes, flush eyes with water for 15 minutes and see a physician immediately.

Avoid Skin Contact

Wear butyl rubber gloves when handling any ink, make-up fluid or cleaning solution. Avoid contact with skin and mucous membranes (nasal passage, throat). Upon contact with skin, remove any contaminated clothing and wash area with soap and water. See a physician if irritation persists.

Avoid Breathing in Vapors

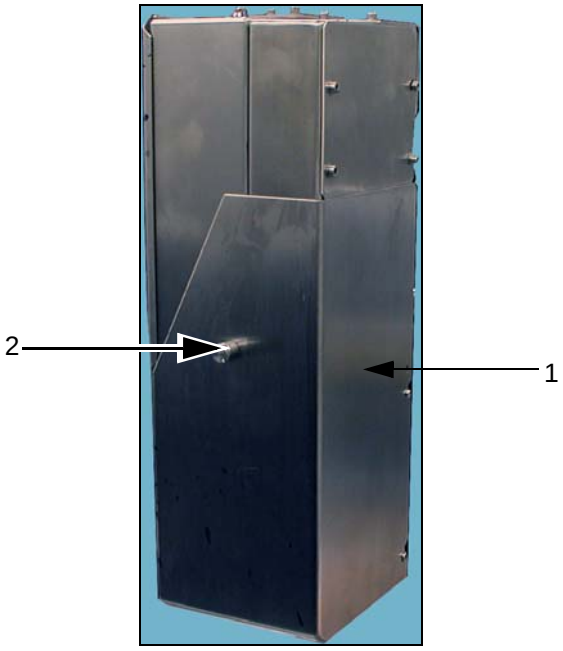
Avoid prolonged exposure to vapors. If respiratory protection is needed, a cartridge organic respirator is required.

Do the following tasks to start the printer:

1 Put the printhead in the service position. Refer to Figure 5-1 on page 5-3.

Figure 5-1: Printhead in Service Position

2 Loosen the cover screw (Item 2, Figure 5-2) and remove the cover (Item 1).

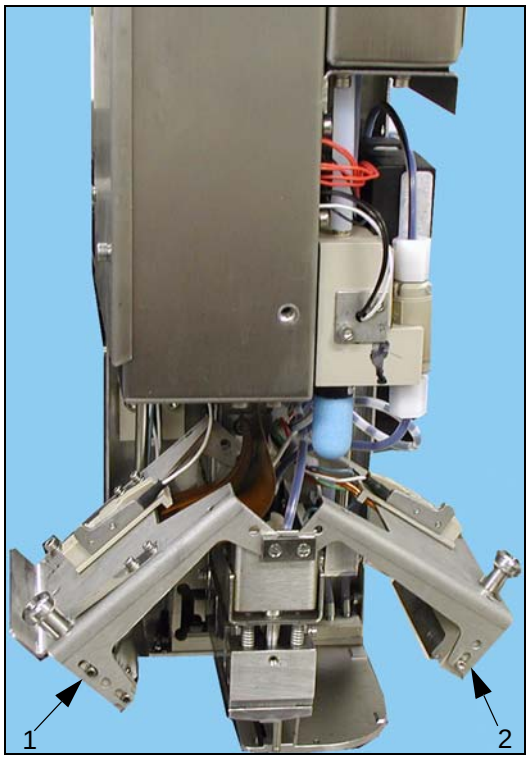


1. Cover
2. Screw

Figure 5-2: Cover Screw

3 Raise the ground arm (Item 2, Figure 5-3) in the upward direction.

4 Raise the live arm (Item 1, Figure 5-3) in the upward direction and lower the protective cover over the charge electrode (Figure 5-4).



1. Live Arm
2. Ground Arm

Figure 5-3: Rotate the Swing Arms

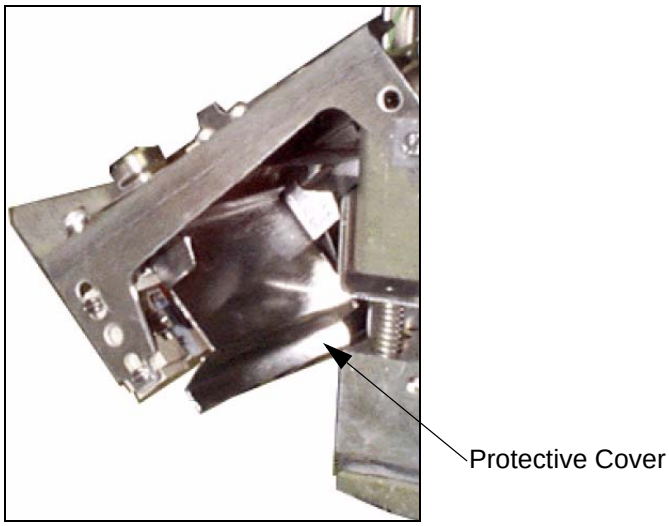


Figure 5-4: Lower the Protective Cover

5 Press the main power button of the printer (Figure 5-5).

***Note**: The printer performs a number of automatic diagnostic tests. During the diagnostic tests, you can hear a clicking sound and see the lights which flash on the front panel. The red LED on the top of the printheads also must flash one time.*

Note: After the power-up, the printer requires two minutes before the printer can communicate with the Crescendo controller. If the Crescendo software does not create an automatic link then, close the software and open software again. Check the connectivity under the system information tab of the dialog box for the printer configuration.

Figure 5-5: Power Button

6 Turn on the PC that has Crescendo software loaded.

7 Double-click the icon shown in Figure 5-6. The GUI opens.

Figure 5-6: Crescendo Icon

8 If the security is not enabled, select the role of the operator and log into the software. Access the *Print a Job* tab.

***Note:** The operator can access only the Print a Job tab.*

9 If the security system is enabled, the *Login/Logout* dialog box appears. Refer to Figure 5-7 on page 5-6.

10 Enter the user name and password to log into the GUI.

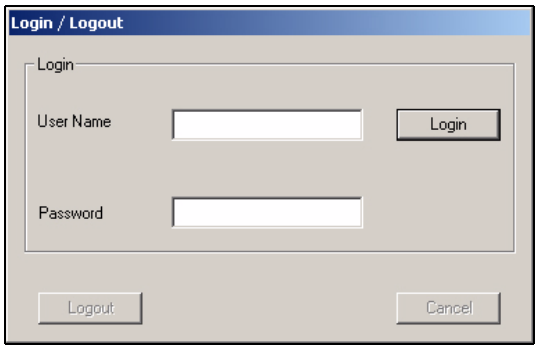


Figure 5-7: Login / Logout Dialog Box

11 Access the *Print a Job* tab, and click *Show Operations Screen* icon to see the *Operations and Diagnostics* screen for one of the heads (Figure 5-8).

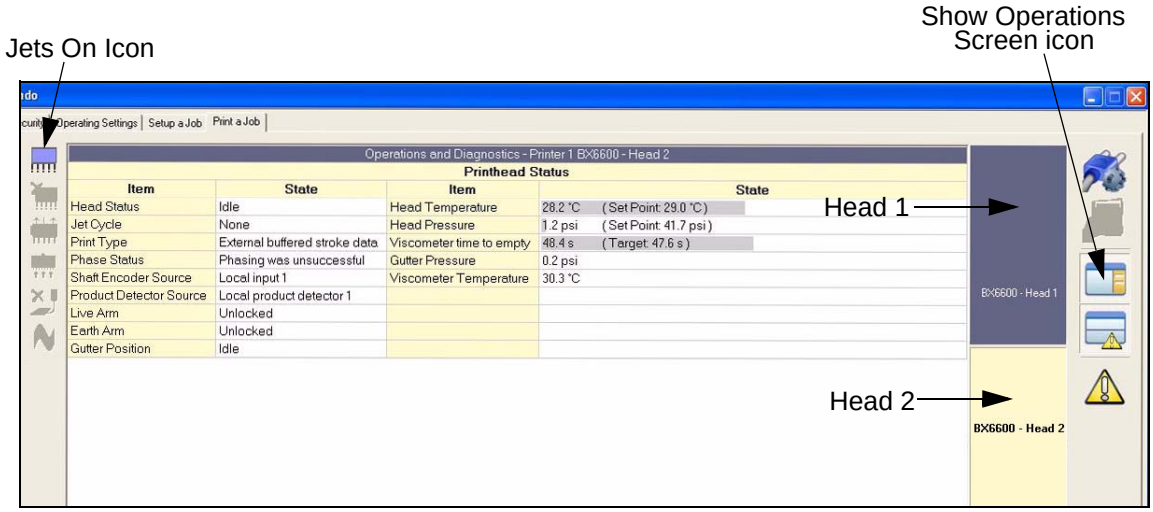


Figure 5-8: Jets On Icon

12 Select the correct printhead and click the *Jets On* icon to turn on the jets. Repeat the same for additional heads if necessary (Figure 5-9).

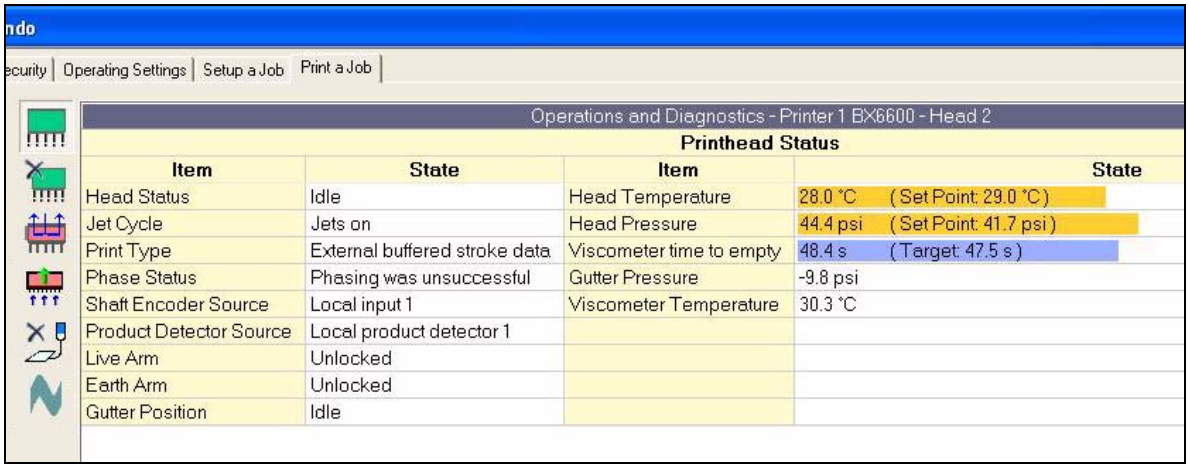

ndo
ecurity | Operating Settings | Setup a Job | Print a Job
Operations and Diagnostics - Printer 1 BX6600 - Head 2
Printhead Status
Item | State | Item | State
Head Status | Idle | Head Temperature | 28.0 °C (Set Point: 29.0 °C)
Jet Cycle | Jets on | Head Pressure | 44.4 psi (Set Point: 41.7 psi)
Print Type | External buffered stroke data | Viscometer time to empty | 48.4 s (Target: 47.5 s)
Phase Status | Phasing was unsuccessful | Gutter Pressure | -9.8 psi
Shaft Encoder Source | Local input 1 | Viscometer Temperature | 30.3 °C
Product Detector Source | Local product detector 1
Live Arm | Unlocked
Earth Arm | Unlocked
Gutter Position | Idle

Figure 5-9: Jets On

13 Clean the printhead. Refer to the "Eight Hour Maintenance" on page 4-6.

14 Wait until each printhead reaches the correct temperature for phasing. The correct operating temperature is reached in approximately 10 minutes.

Note: *The printhead status bar for temperature changes to blue color (Figure 5-10) and the green running man LED on the control panel illuminates continuously.*

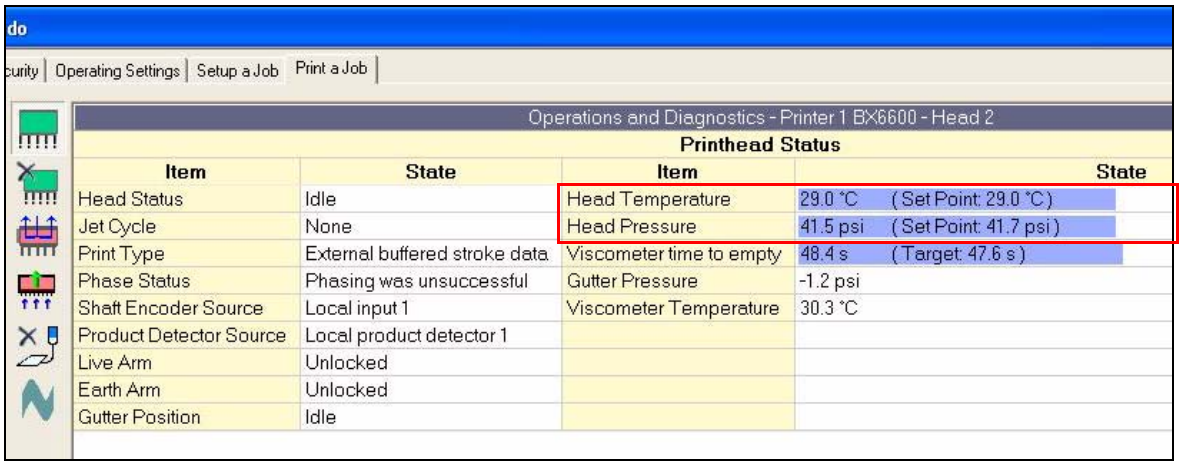

do
curity | Operating Settings | Setup a Job | Print a Job
Operations and Diagnostics - Printer 1 BX6600 - Head 2
Printhead Status
Item | State | Item | State
Head Status | Idle | Head Temperature | 29.0 °C (Set Point: 29.0 °C)
Jet Cycle | None | Head Pressure | 41.5 psi (Set Point: 41.7 psi)
Print Type | External buffered stroke data | Viscometer time to empty | 48.4 s (Target: 47.6 s)
Phase Status | Phasing was unsuccessful | Gutter Pressure | -1.2 psi
Shaft Encoder Source | Local input 1 | Viscometer Temperature | 30.3 °C
Product Detector Source | Local product detector 1
Live Arm | Unlocked
Earth Arm | Unlocked
Gutter Position | Idle

Figure 5-10: Printhead Temperature

Note: *You can find the green LED indicators on the front of the printer cabinet.*

15 Phase the printhead that is required to print the jobs. Refer to the "Phasing the Printer" on page 5-8.

16 Load and print the jobs.

Phasing the Printer

This procedure considers that the printer has started, the jets are turned on and the printhead has reached the correct temperature for phasing.

The flashing of the green LED indicator found on the front of the printer stops and remains continuously turned on. This condition indicates that the correct temperature for phasing is reached. If the printer has one printhead, then one indicator remains turned on continuously.

Do the following tasks to perform the phasing:

1 Raise the protective cover over the charge electrode.

2 Make sure that the live block and the charge electrode are clean.

If the live block and the charge electrode are not clean, refer to "Eight Hour Maintenance" on page 4-6.

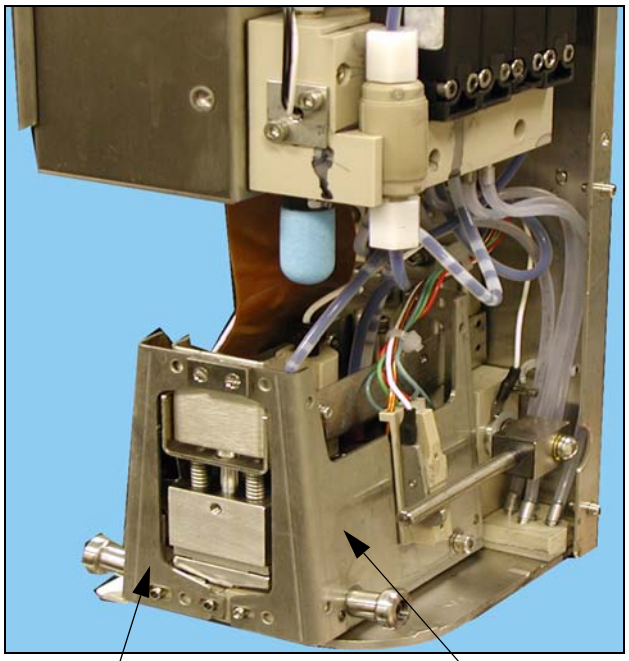
3 Lower and lock the live swing arm with the lock bars. Refer to Figure 5-11.

4 Inspect the charge electrode again to make sure that the charge electrode is clean. If the charge electrode is not clean, refer to "Eight Hour Maintenance" on page 4-6.

5 Inspect the ground arm to make sure that the arm is clean.

Note: *Refer to* "Eight Hour Maintenance" on page 4-6 *to clean the ground arm.*

6 Lower and lock the ground arm with the lock bars.



1. Ground Arm
2. Live Arm

Figure 5-11: Rotate Swing Arms Down

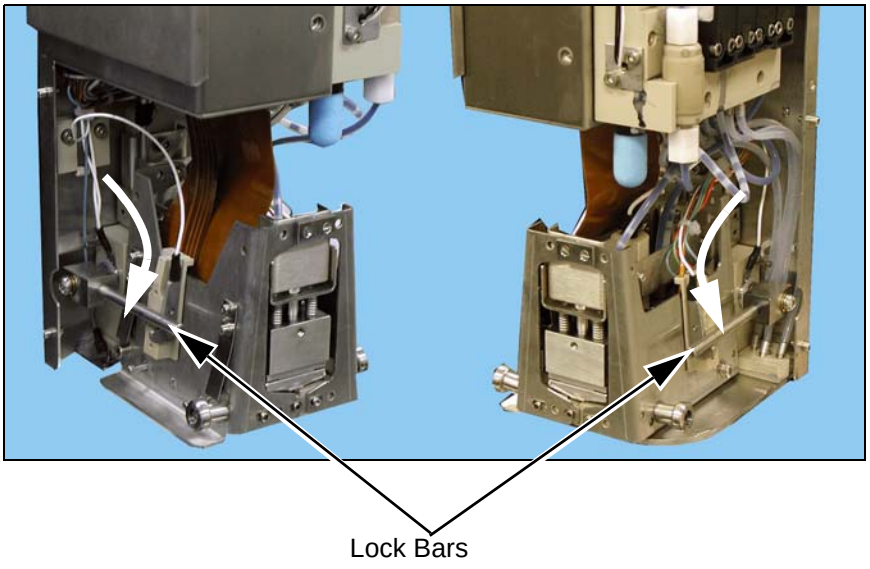


Figure 5-12. Swing Arm Lock Bars

7 For the phasing of a printhead, click the Phase icon (Figure 5-13 on page 5-10). The phasing of one printhead begins. To perform the phasing for both the printheads, click the Phase icon shown in Figure 5-14 on page 5-10.

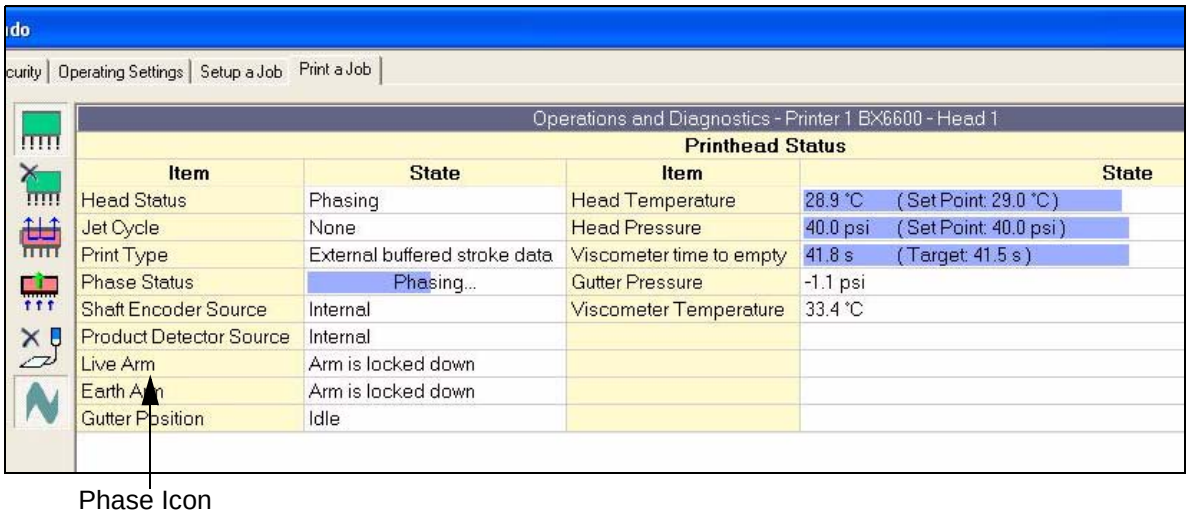

curity | Operating Settings | Setup a Job | Print a Job
Operations and Diagnostics - Printer 1 BX6600 - Head 1
Printhead Status
Item | State | Item | State
Head Status | Phasing | Head Temperature | 28.9 °C (Set Point: 29.0 °C)
Jet Cycle | None | Head Pressure | 40.0 psi (Set Point: 40.0 psi)
Print Type | External buffered stroke data | Viscometer time to empty | 41.8 s (Target: 41.5 s)
Phase Status | Phasing... | Gutter Pressure | -1.1 psi
Shaft Encoder Source | Internal | Viscometer Temperature | 33.4 °C
Product Detector Source | Internal
Live Arm | Arm is locked down
Earth Arm | Arm is locked down
Gutter Position | Idle
Phase Icon

Figure 5-13: Phase - One Printhead

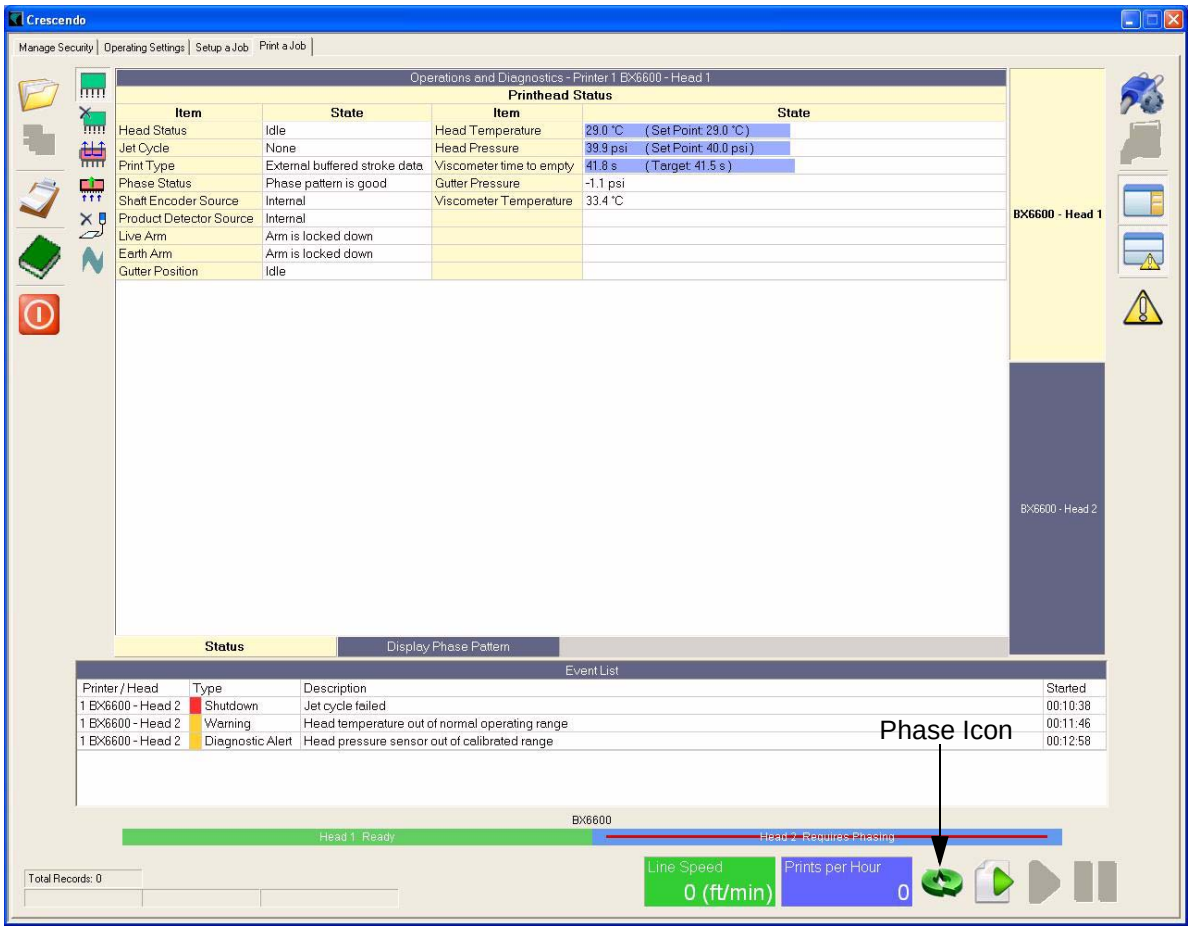

Crescendo
Manage Security | Operating Settings | Setup a Job | Print a Job
Operations and Diagnostics - Printer 1 BX6600 - Head 1
Printhead Status
Item | State | Item | State
Head Status | Idle | Head Temperature | 29.0 °C (Set Point: 29.0 °C)
Jet Cycle | None | Head Pressure | 39.9 psi (Set Point: 40.0 psi)
Print Type | External buffered stroke data | Viscometer time to empty | 41.8 s (Target: 41.5 s)
Phase Status | Phase pattern is good | Gutter Pressure | -1.1 psi
Shaft Encoder Source | Internal | Viscometer Temperature | 33.4 °C
Product Detector Source | Internal
Live Arm | Arm is locked down
Earth Arm | Arm is locked down
Gutter Position | Idle
BX6600 - Head 1
BX6600 - Head 2
Status
Display Phase Pattern
Event List
Printer / Head | Type | Description | Started
1 BX6600 - Head 2 | Shutdown | Jet cycle failed | 00:10:38
1 BX6600 - Head 2 | Warning | Head temperature out of normal operating range | 00:11:46
1 BX6600 - Head 2 | Diagnostic Alert | Head pressure sensor out of calibrated range | 00:12:58
Phase Icon
BX6600
Head 1: Ready
Head 2: Requires Phasing
Total Records: 0
Line Speed
0 (ft/min)
Prints per Hour
0

Figure 5-14: Phase - Two Printheads

8 If the software gives the error messages during the phasing process (refer to Figure 5-15 on page 5-11), try the following methods to correct the errors:

- Clean the printhead. Refer to "Eight Hour Maintenance" on page 4-6.
- Check for skews. If skews are seen, perform the backflush procedure. Refer to "Backflush Procedure" on page 6-8 in the Crescendo Service Manual (part number 365866).

Note: *If you continue to get the error messages, contact the VTI technician for further assistance.*

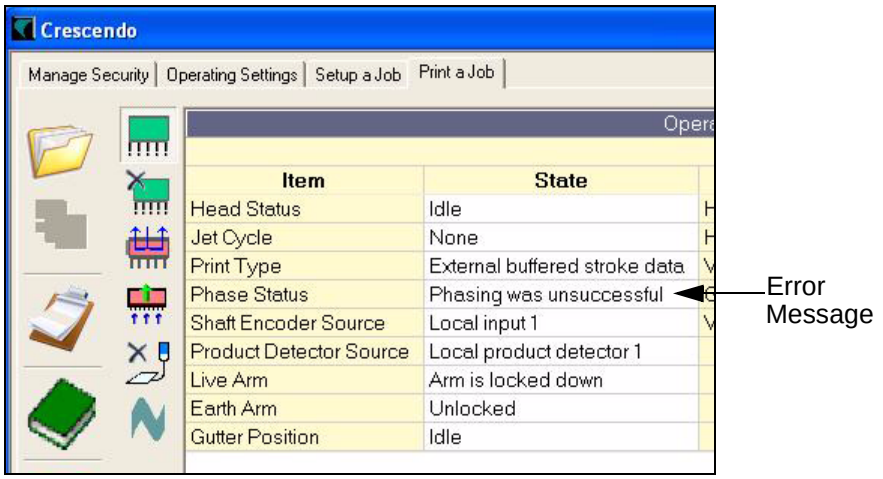


Figure 5-15. Error Message

9 When the phasing is successful, attach the printhead cover.

The Phasing Passes

If there is no error message in the display, then the printhead has passed phasing and you can start the printing process. When the phasing passes, the printer automatically and continuously phases itself in the print mode. If a trip occurs or you close the software and open again, perform the phasing to the printhead again. Else, the printer automatically phases itself while in the print mode and further phasing is not required.

The second picture in Figure 5-16 shows a normal passing phase pattern. Also you can see that there are no clear spikes, blocks, waves, or gaps in the pattern.

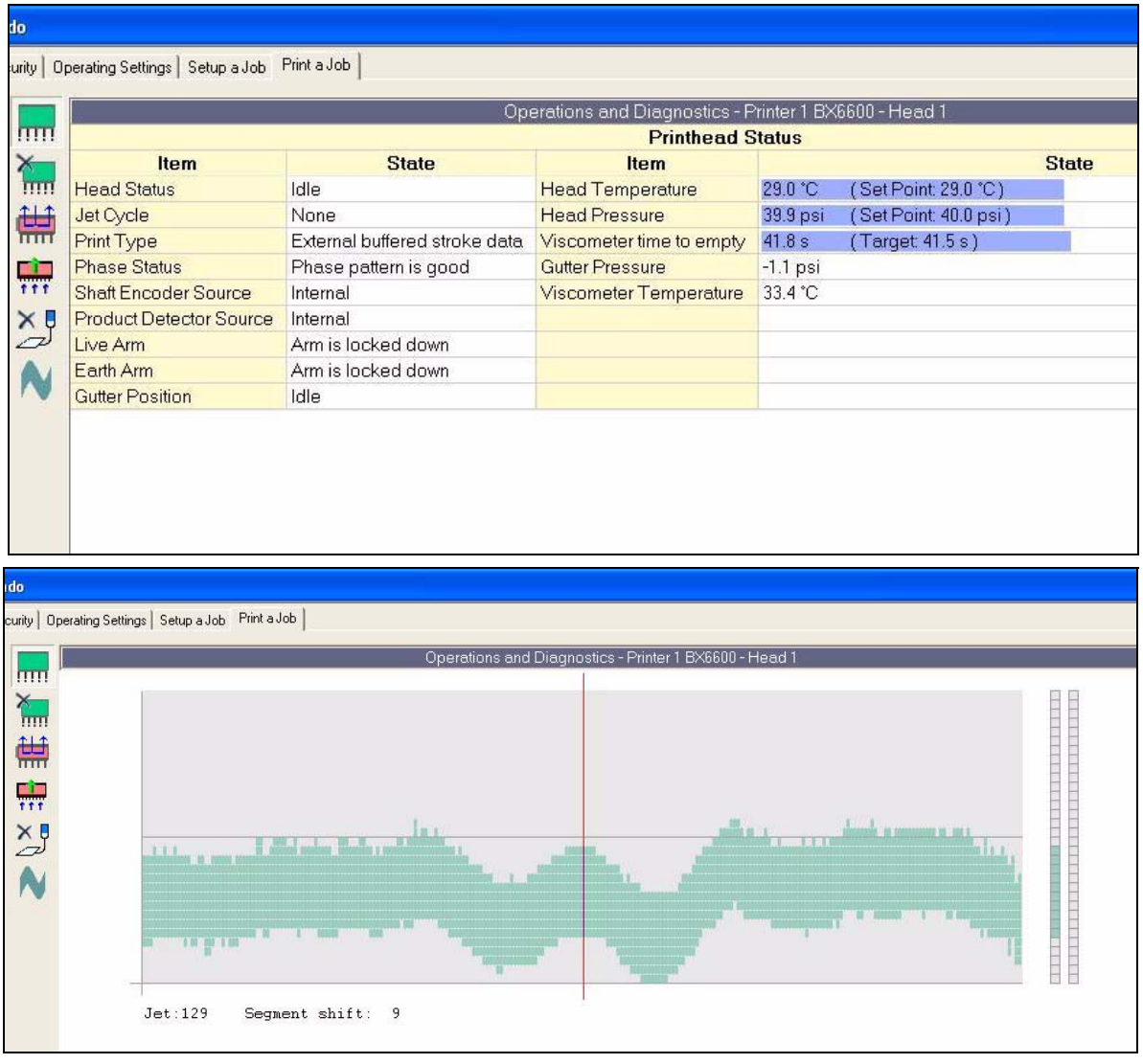


Figure 5-16: Phase Pass Status and Result

The Phasing Fails

A normal failing phase pattern is shown in Figure 5-17. Refer to Step 8 on page 11 for methods to correct the errors.

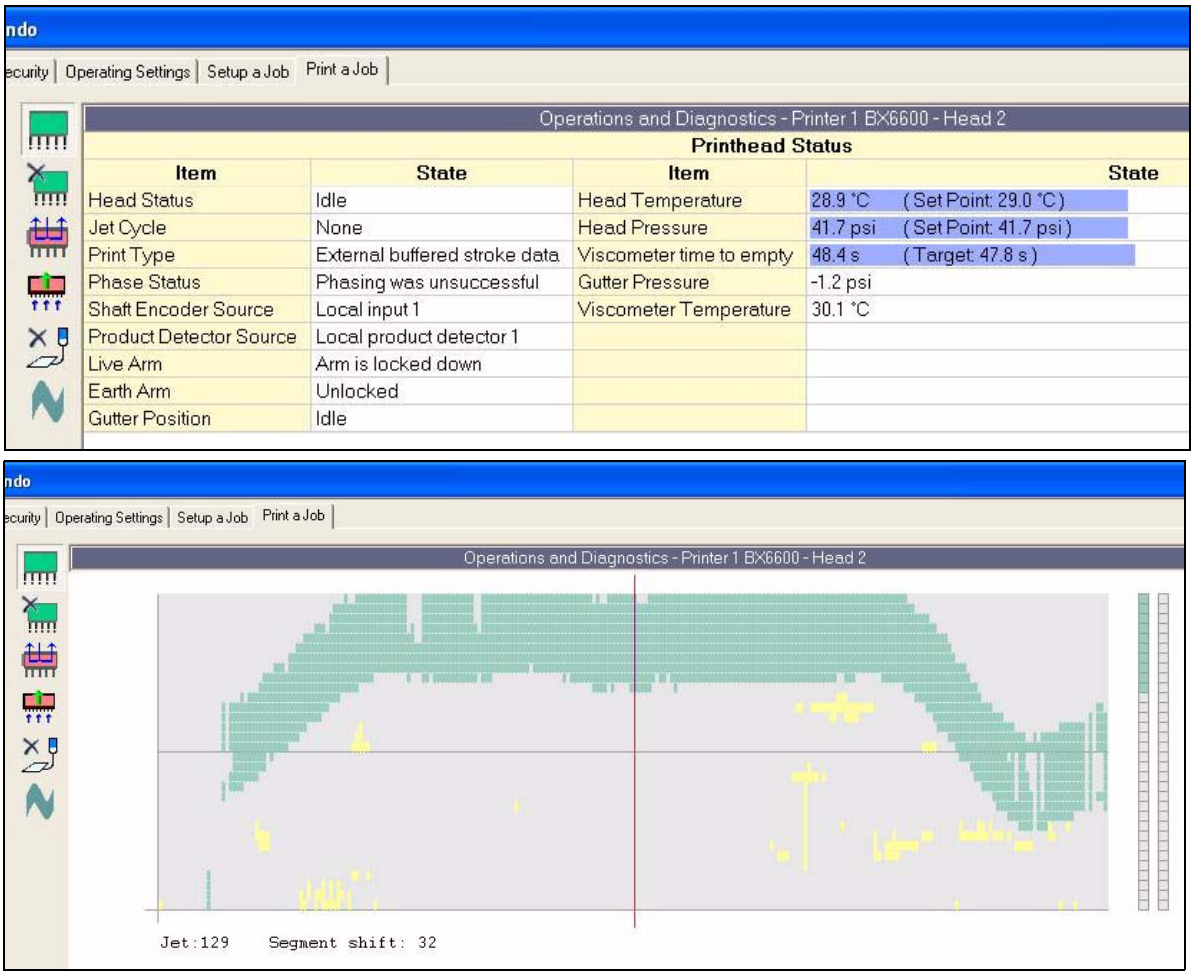

ndo
ecurity | Operating Settings | Setup a Job | Print a Job
Operations and Diagnostics - Printer 1 BX6600 - Head 2
Printhead Status
Item | State | Item | State
Head Status | Idle | Head Temperature | 28.9 °C (Set Point: 29.0 °C)
Jet Cycle | None | Head Pressure | 41.7 psi (Set Point: 41.7 psi)
Print Type | External buffered stroke data | Viscometer time to empty | 48.4 s (Target: 47.8 s)
Phase Status | Phasing was unsuccessful | Gutter Pressure | -1.2 psi
Shaft Encoder Source | Local input 1 | Viscometer Temperature | 30.1 °C
Product Detector Source | Local product detector 1
Live Arm | Arm is locked down
Earth Arm | Unlocked
Gutter Position | Idle
ndo
ecurity | Operating Settings | Setup a Job | Print a Job
Operations and Diagnostics - Printer 1 BX6600 - Head 2
Jet:129 Segment shift: 32

Figure 5-17: Phase Fail Status and Result

Shutdown Procedure

Caution

EQUIPMENT DAMAGE. The printer system must be free of any ink before the printer is shut down. Otherwise, any ink which remains may gather and harden in the ink system which would require major repairs to correct. When the system is completely free of ink, the flashing LEDs on the cabinet's main control panel will stop flashing and go completely out.

Caution

EQUIPMENT DAMAGE. The printhead(s) must be in a completely vertical position when the printer is shut down. Otherwise, ink may gather and harden in to nozzle and manifold which would require major repair to correct.

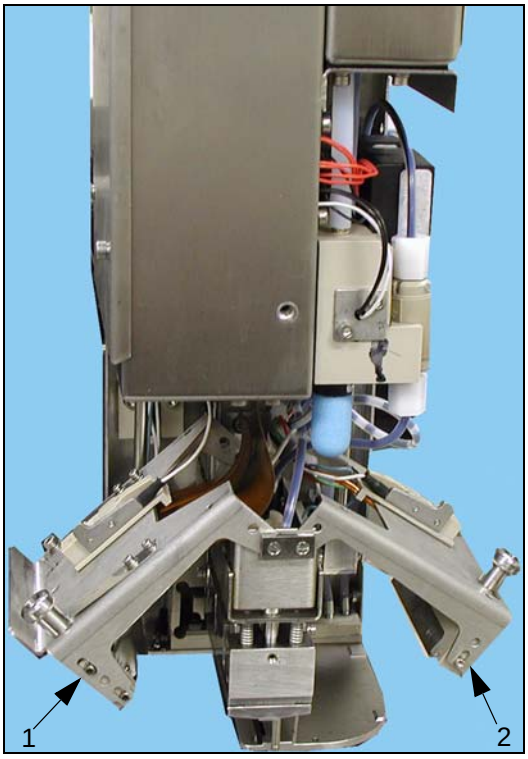
This section describes how to shut down the printer.

1. Remove the printer from the production print.

   ***Note**: When the printer is out of print, the red light on the top of the printhead is not illuminated.*

2. Loosen the cover screw on the printhead and remove the cover.
3. Raise the lock bars and rotate the swing arms in the upward direction.

   Rotate the ground arm (Item 2, Figure 5-18) in the upward direction first, then rotate the live arm (Item 1) in the upward direction.



1. Live Arm
2. Ground Arm

Figure 5-18. Rotate Swing Arms

4 Select the correct printhead that you require to shutdown and click the Jets on/off icon to turn off the jets. If necessary, repeat the same for additional printheads. Refer to Figure 5-19.

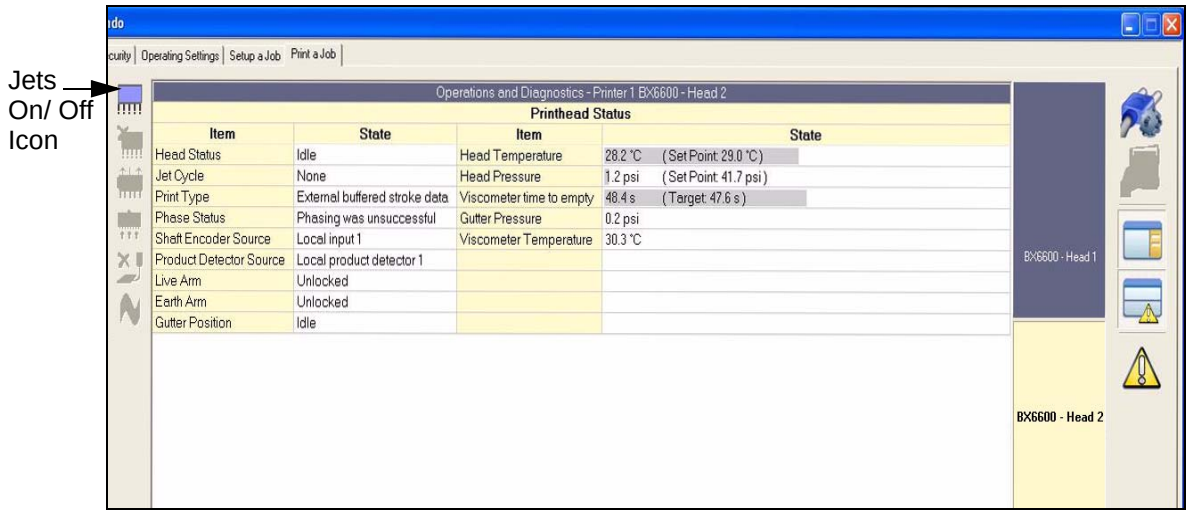


Figure 5-19: Jets Off Icon

5 Wait approximately 3 to 4 minutes for removal of ink from the printer system. The green LEDs on the control panel are turned off after the procedure for jets off is complete.

6 Shut down the Crescendo software and the GUI PC.

7 Press the main-power button of the printer (Figure 5-20) and turn off the printer completely.

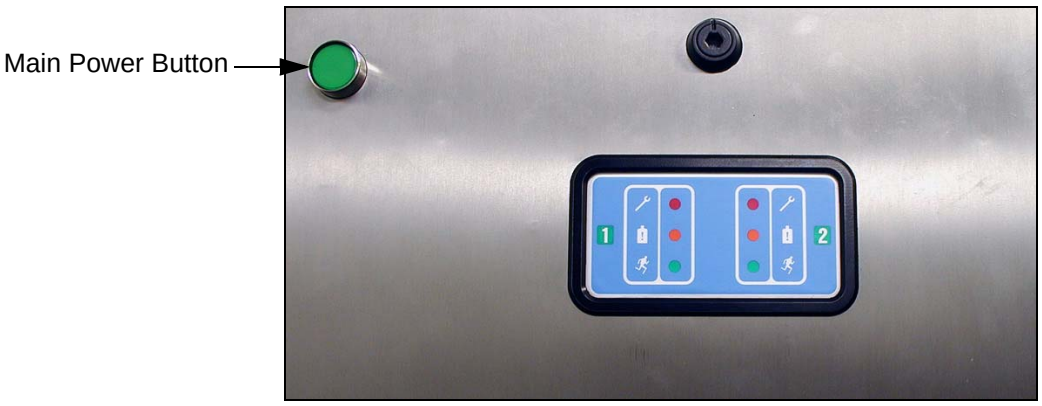


Figure 5-20: Power Button

8 Carefully close the swing arms but do not lock them in position with the lock bars.

9 Attach the printhead cover.

How to Print a Job

Note: *You can print a job if the printer and the jets are turned on. Else refer to "Startup Procedure" on page 5-2.*

Note: *The printer must pass the phasing before the printer is put into the print mode.*

Do the following tasks to print a job:

1 Open the *Print a Job* tab screen.

The different icons on the *Print a job* screen, and their description are shown in Table 5-1.

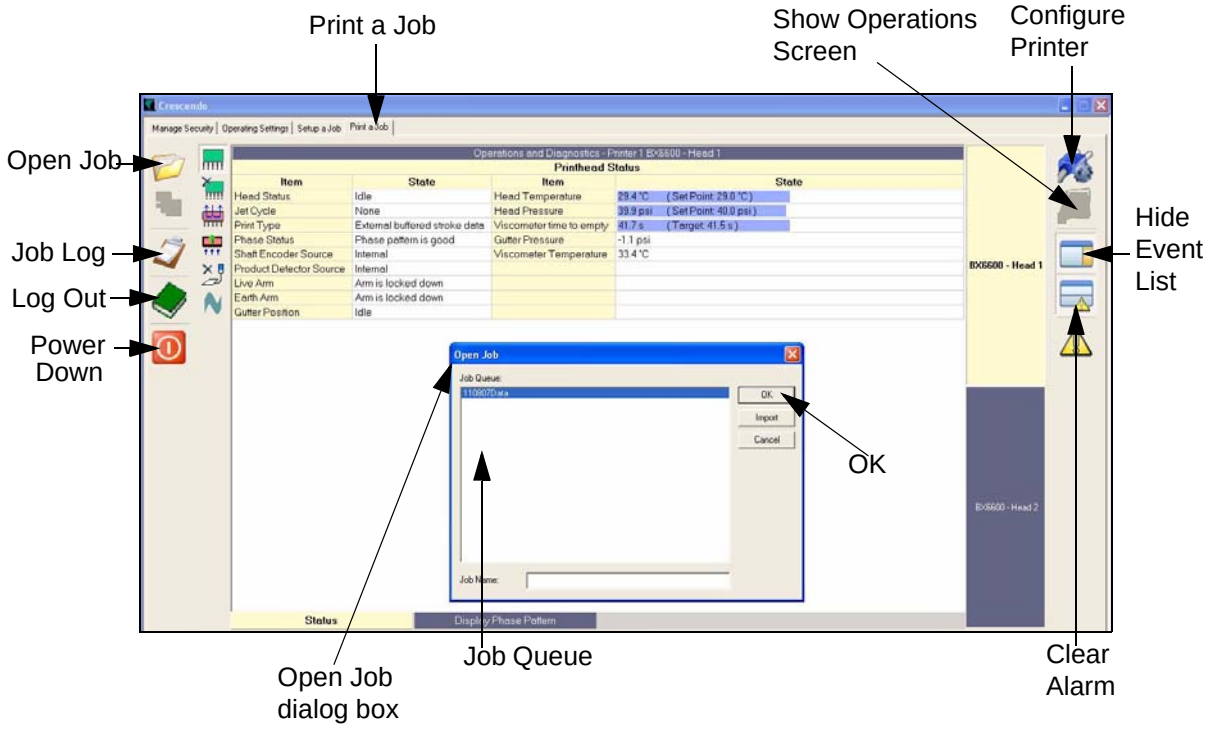


Figure 5-21: Print a Job Tab Screen

Icon	Description
	Open Job - Allows the operator to open a previous job that you saved.
	Job Log - Displays the information on the job that is selected.

Table 5-1: Print a Job - Icon Description

Icon	Description
	Log Out - Allows to log out and log in as a different user
	Power Down - Closes only the GUI
	Configure Printer - Displays system information and allows the operator to adjust printhead offset.
	Show Operations Screen - Shows operations and diagnostics screen for the printer
	Hide Event List - Hides or shows the event list
	Clear Alarm - Resets the warnings and errors. ***Note:*** *To know more about the alarms, refer to the Trouble-shooting section of the BX65/6600 Service Manual*
	Serializer Options print a group of records.
	This function finds a record in a loaded file. You can use the function to add the records into the Reprint List.
	Show reprint list displays the records to be reprinted.
	Add to reprint list adds the records to the reprint list.
	Clear reprint list removes the records from the reprint list.

Table 5-1: Print a Job - Icon Description (Continued)

2 Click the *Open Job* icon. The *Open Job* dialog box opens (Figure 5-21 on page 5-17).

Note: *Only jobs that are added to the print list appear here.*

3 Open the job you require to print.

4 Click the *OK* button to upload the job.

The list of entries in the selected job appears. Refer to Figure 5-23.

5 Select the record that you require to print.

Note: *The software automatically begins to print from the first record. To start from a known record then, use the Find in Data search function (refer to Figure 5-22.*

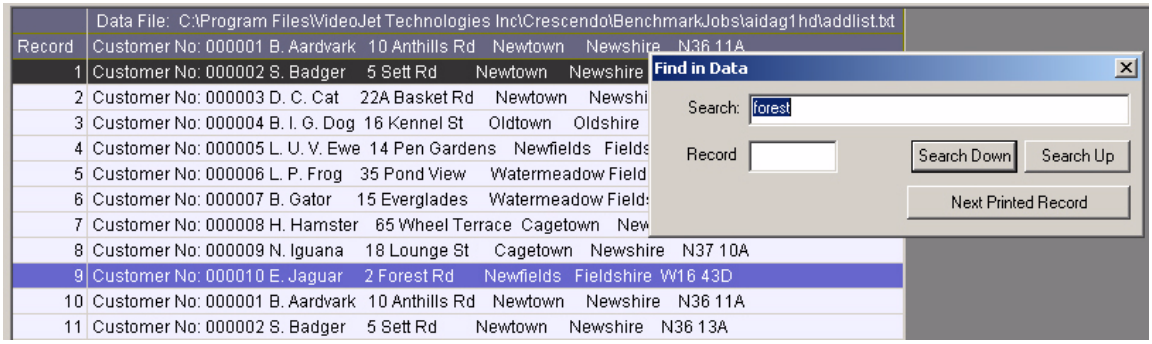

Data File: C:\Program Files\VideoJet Technologies Inc\Crescendo\BenchmarkJobs\aidag1hd\addlist.txt
Record
1 Customer No: 000002 S. Badger 5 Sett Rd Newtown Newshire
2 Customer No: 000003 D. C. Cat 22A Basket Rd Newtown Newshi
3 Customer No: 000004 B. I. G. Dog 16 Kennel St Oldtown Oldshire
4 Customer No: 000005 L. U. V. Ewe 14 Pen Gardens Newfields Fields
5 Customer No: 000006 L. P. Frog 35 Pond View Watermeadow Field
6 Customer No: 000007 B. Gator 15 Everglades Watermeadow Field
7 Customer No: 000008 H. Hamster 65 Wheel Terrace Cagetown New
8 Customer No: 000009 N. Iguana 18 Lounge St Cagetown Newshire N37 10A
9 Customer No: 000010 E. Jaguar 2 Forest Rd Newfields Fieldshire W16 43D
10 Customer No: 000001 B. Aardvark 10 Anthills Rd Newtown Newshire N36 11A
11 Customer No: 000002 S. Badger 5 Sett Rd Newtown Newshire N36 13A
Find in Data
Search: forest
Record
Search Down
Search Up
Next Printed Record

Figure 5-22: Find in Data

6 Click the button to print the selected job.

Note: *Click the Pause Printing button to pause a running job.*

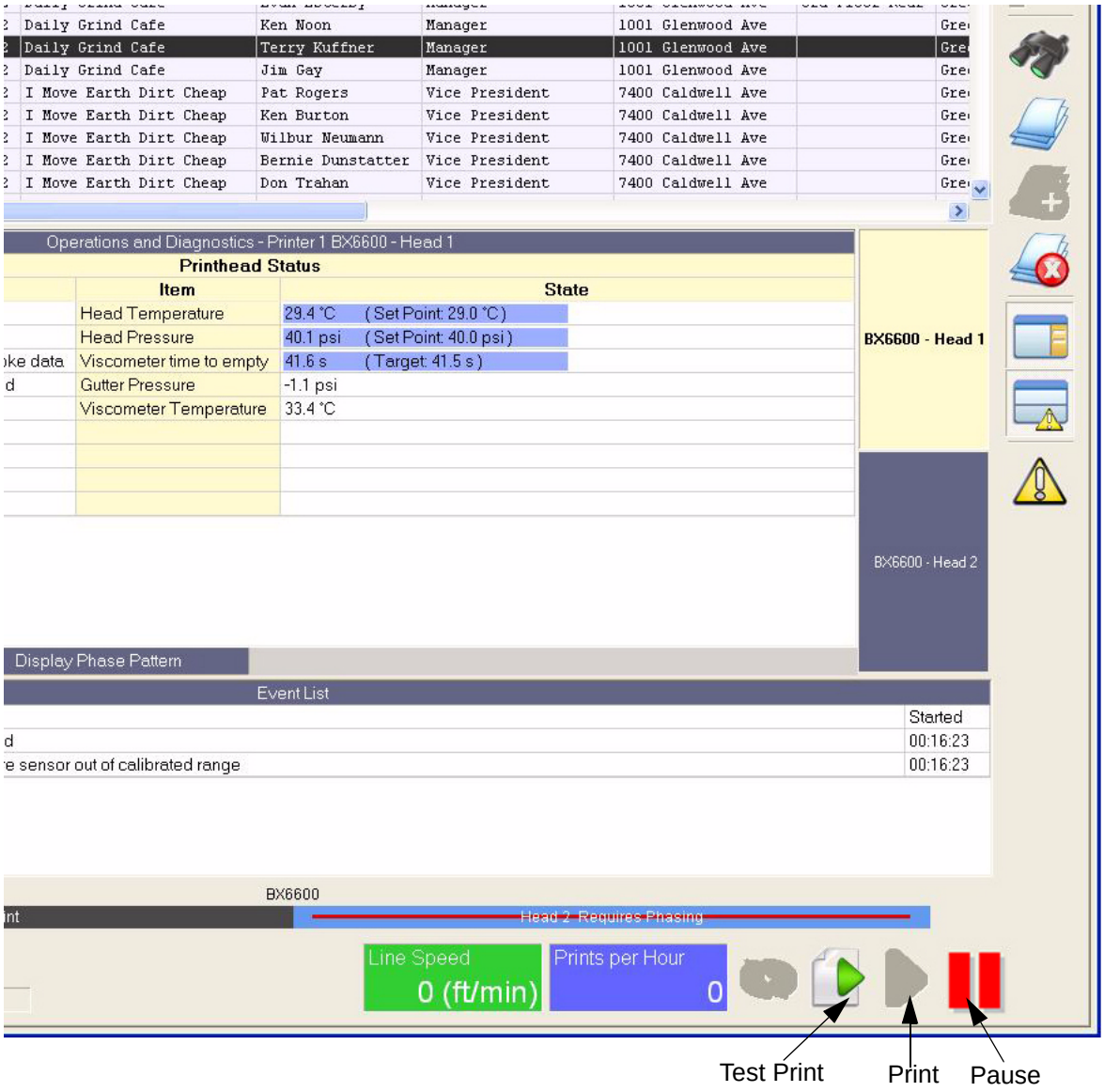

Daily Grind Cafe Ken Noon Manager 1001 Glenwood Ave
Daily Grind Cafe Terry Kuffner Manager 1001 Glenwood Ave
Daily Grind Cafe Jim Gay Manager 1001 Glenwood Ave
I Move Earth Dirt Cheap Pat Rogers Vice President 7400 Caldwell Ave
I Move Earth Dirt Cheap Ken Burton Vice President 7400 Caldwell Ave
I Move Earth Dirt Cheap Wilbur Neumann Vice President 7400 Caldwell Ave
I Move Earth Dirt Cheap Bernie Dunstatter Vice President 7400 Caldwell Ave
I Move Earth Dirt Cheap Don Trahan Vice President 7400 Caldwell Ave
Operations and Diagnostics - Printer 1 BX6600 - Head 1
Printhead Status
Item
State
Head Temperature 29.4 °C (Set Point: 29.0 °C)
Head Pressure 40.1 psi (Set Point: 40.0 psi)
Viscometer time to empty 41.6 s (Target: 41.5 s)
Gutter Pressure -1.1 psi
Viscometer Temperature 33.4 °C
BX6600 - Head 1
BX6600 - Head 2
Display Phase Pattern
Event List
Started
00:16:23
00:16:23
sensor out of calibrated range
BX6600
Head 2 Requires Phasing
Line Speed
0 (ft/min)
Prints per Hour
0
Test Print
Print
Pause

Figure 5-23: Print a Job

Job Log

This option displays the information of the job that is you select.

Click the *Job Log* icon (Figure 5-21 on page 5-17). The *Job Log* screen appears. You can select the required job from the *Select Job Name* and click the *Filter* button. The information of the job is displayed below. You can select the time frame also.

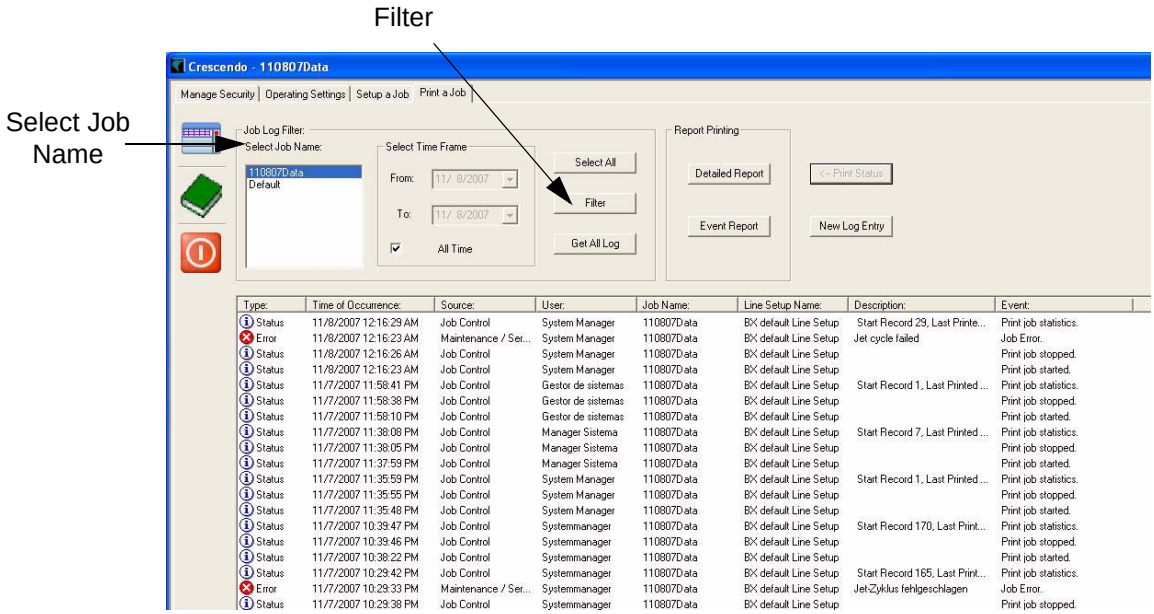


Figure 5-24. Job Log Screen

Glossary

The following list defines some of the BX 6500/6600 terminology.

ARRAY
The array is the combined ink streams in the printheads. The BX 6500/6600 has 128 or 256 ink streams.

BITMAP
A bitmap is a grid (or matrix) that has small dots used to define a picture, line drawing or character.

CAP ASSEMBLY (BUNG ASSEMBLY)
The cap assembly is the Cap and Float assembly found on the ink and make-up reservoirs.

CAUTION
A CAUTION within the text indicates a hazard or dangerous procedure which can cause minor personal injury or damage to property and equipment.

dpi
Dots per inch (dpi) is a measurement of image resolution. The greater the dpi, finer the image resolution is got.

FLASHPOINT
The lowest temperature at which the vapor of a volatile material is ignited.

FLUSH
Flush is a printer fluid that cleans the jets during the procedures with some inks. Flush also cleans the printhead and other printer components from a wash bottle.

GUTTER
The printhead gutter captures any additional ink and returns the ink to the ink system. This ink is used again (recycle).

IDLE MODE
In Idle mode, the return gutter is in its forward position, HT and BIAS voltages are off, and all ink is captured in the gutter and used again. The voltage is not applied to the plates.

IMAGE

An image is a picture built with dots, or pixels. The picture can have text, barcodes, graphics, variable information, or a combination of these elements.

INK PRESSURE

Ink pressure is the pressure that causes the ink to flow from of the printhead through the nozzle. Ink pressure causes the drop formation and calculates the speed at which the ink moves.

LED

Light Emitting Diode. These LEDs are on several printed circuit boards and are used in the troubleshooting purposes. When in the printer is in the print mode, the HT LED on the printhead lights.

MAKE UP

Make-up is the solvent portion of the ink and added at given intervals to the fluid in the ink system to maintain correct ink viscosity.

NOTE

A Note within the text indicates general instructions and procedures on safety rules.

NOZZLE ORIFICES

The Nozzle Orifices are small holes in the nozzle plate through which flow of each ink jets occurs.

NOZZLE PLATE

The nozzle plate is a printhead component that contains the orifices through which ink jets flow.

PHASING

PHASING is a calibration procedure which allows the printer system to make sure that there is synchronization in the timing of charge voltage with the break off point timing. When a trip occurs, or if the software is restarted the phasing must be performed before printing for the first time. Else, the printer automatically phases itself in between the prints.

PIXEL

An image has single dots, or pixels. One pixel normally equals one more than one printed ink drops.

PRINT MODE

During the Print mode, the return gutter is pulled back into the retracted position and the high voltage deflector plate is energized. The charged drops (not printed) enter the gutter and drops that are not charged (printing) leave the printhead and create the image.

PRINTHEAD

The printhead contains the components used to turn a pressurized ink stream into small drops of ink which are either charged or not charged.

PRODUCT DETECTOR

The product detector (normally an optical sensor) detects the presence of an object on which printing must occur.

RESERVOIR

The printer contains two new fluid reservoirs for each printhead. One reservoir is for ink and one for make-up.

RESOLUTION

The number of pixels per unit of measure. When the number of pixels is decreased or increased, the resolution is decreased or increased.

SHAFT ENCODER

A shaft encoder is a device that generates the pulses that gives the distance of movement of the transport system. This movement of the transport system gives the product speed.

WARNING

A WARNING within the text indicates a hazardous or dangerous procedure that can cause personal injury or death.